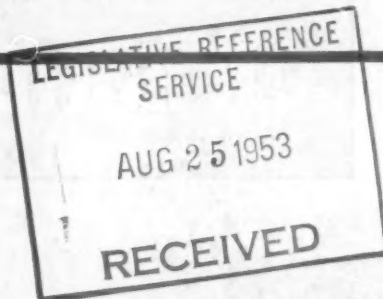


JULY 27, 1953

How Santa Fe Reduces Hot Boxes . . . p. 51

# RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century



## 155 Budd Cars for C P R

For years the management of the Canadian Pacific has made a practice of visiting countries in many parts of the world to study railroad operating practices and the performance of equipment.

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The order includes 30 coaches, 18 kitchen-diners, 71 sleepers, 18 dome-coaches and 18 dome-sleeper-observation cars. All of them will be equipped with Budd railway passenger car disc brakes and the Rolokron anti-wheel-slide device.

Two considerations had much to do with the selection of Budd equipment. One, demonstrated ability to attract traffic. The other, the long and consistent record of Budd cars for low operating and maintenance costs, and outstanding availability.

The Budd Company, Philadelphia 15

**Budd**

PIONEERS IN BETTER TRANSPORTATION



# HOW TO *SAVE* *SUBSTANTIAL* ON BRIDGE PROTECTION

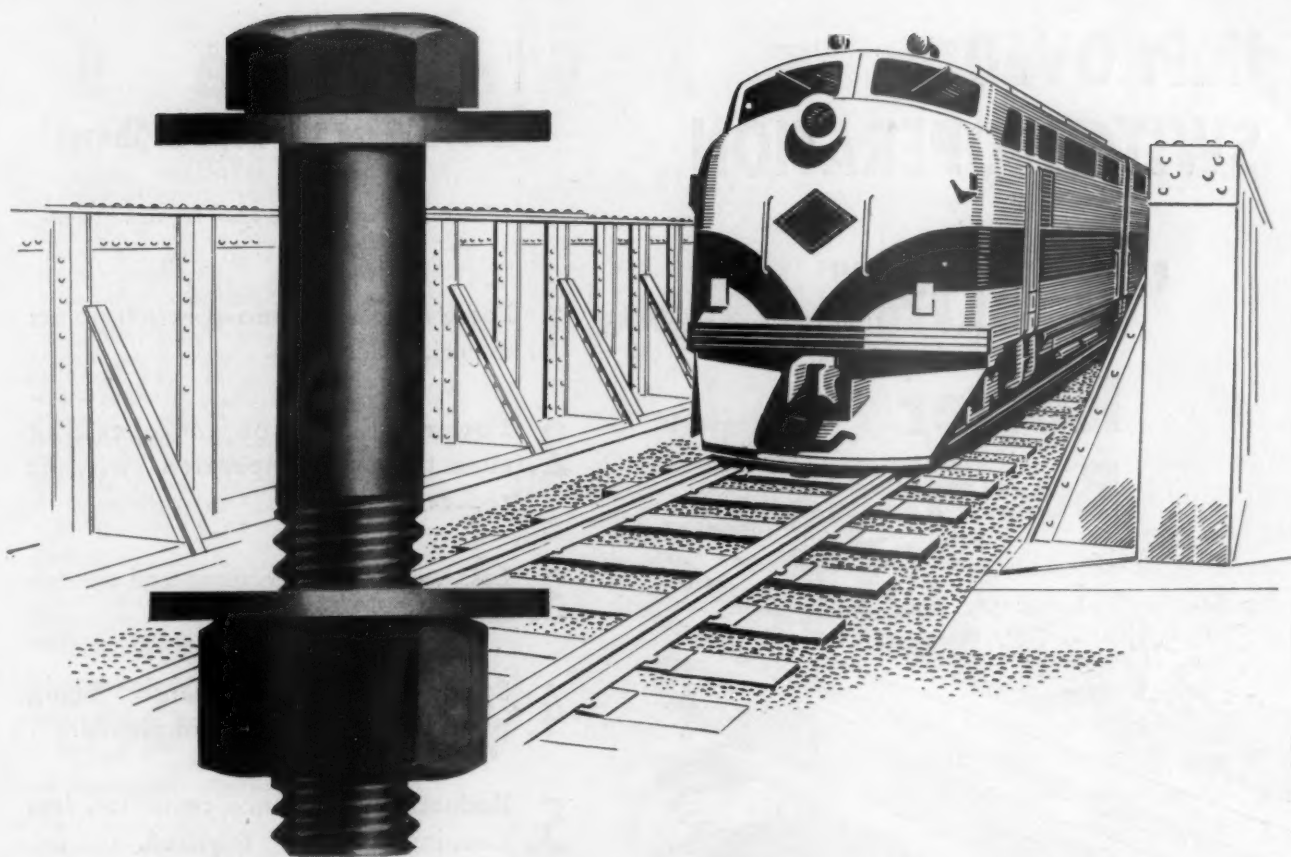


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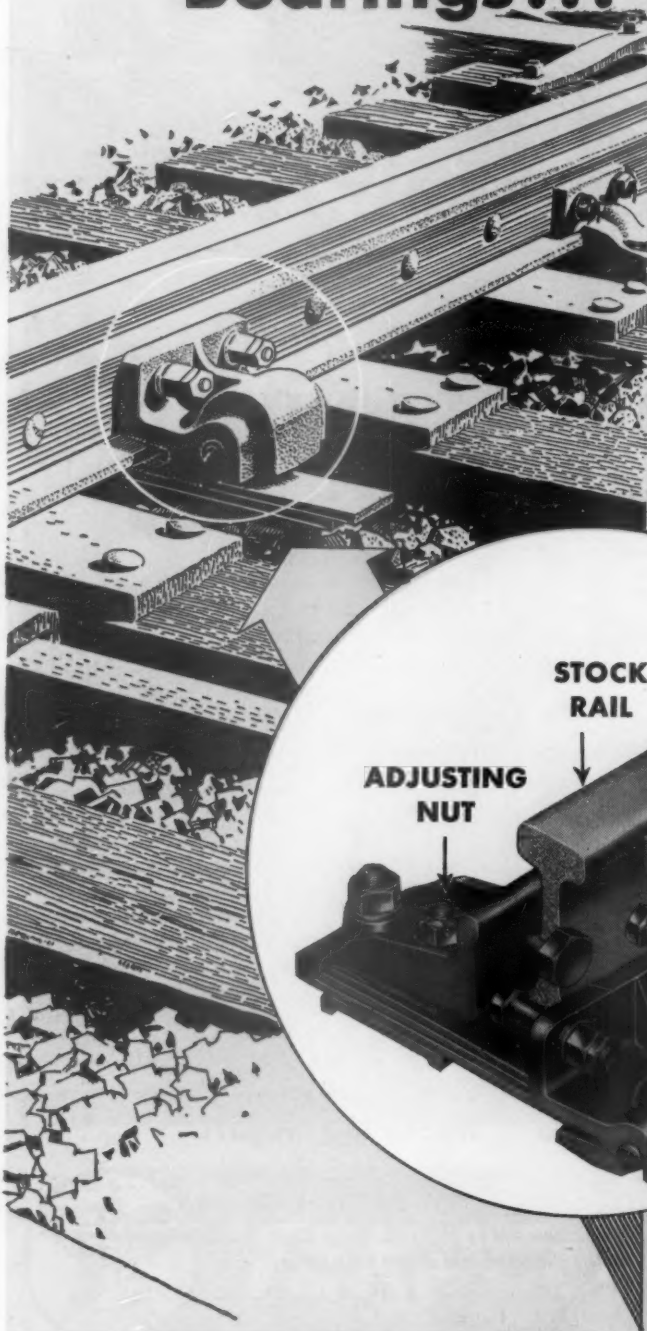


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# RAILWAY AGE

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July 27, 1953

Vol. 135, No. 4

## Week at a Glance

**Rail Movement of Highway Trailers** offers a "challenge" which, if met successfully, can "revitalize" the railroads, with benefit also to truckers and to business in general, B.R.T. President W. P. Kennedy told the B. L. F. & E. at Boston last week in a "no holds barred" address that included severe criticism of railroad management. 11

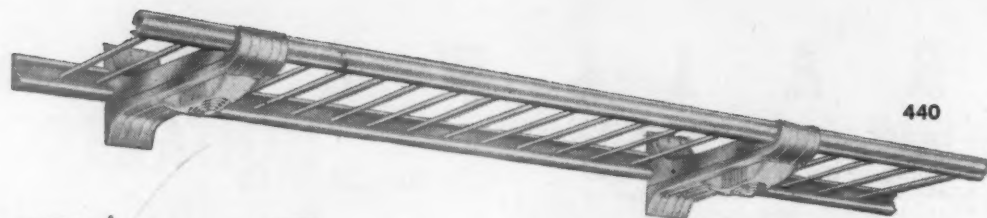
**To the Layman**, it was hard to see how Justice Department lawyers kept a straight face when they contended that Uncle Sam's bargain-basement wartime freight rates were, somehow, extortionate. Now, I.C.C. Examiners Boat and Hosmer have recommended that these complaints be thrown out. A lot of high-quality man-hours had to be consumed in the formal process of getting the right answer to an issue so simple that only an overstaffed and sophomoric bureaucracy ever would have raised it. 12

**More Flat Cars and More Device Cars** are badly needed, said the Midwestern Shippers Advisory Board at its latest meeting, which was productive of many other interesting suggestions. 13

**Car Supply**—highlighted by June installation of 775 new covered hopper cars—is only moderately higher, according to C.S.D. Chairman Arthur H. Gass, but except for high-grade box cars the overall situation is at least temporarily satisfactory. 14

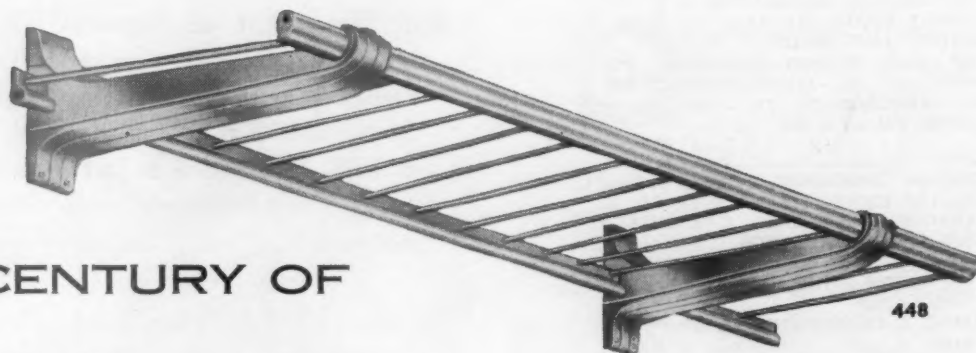
## RAILWAY AGE FORUM

**There's a Lot of Similarity** between problems faced by the railroads and those faced by the Post Office Department. Isn't it at least possible that railroads could illustrate their own difficulties by drawing examples from the department—and equally possible that the department might benefit by applying the "Golden Rule" to its treatment of the railroads? 49



440

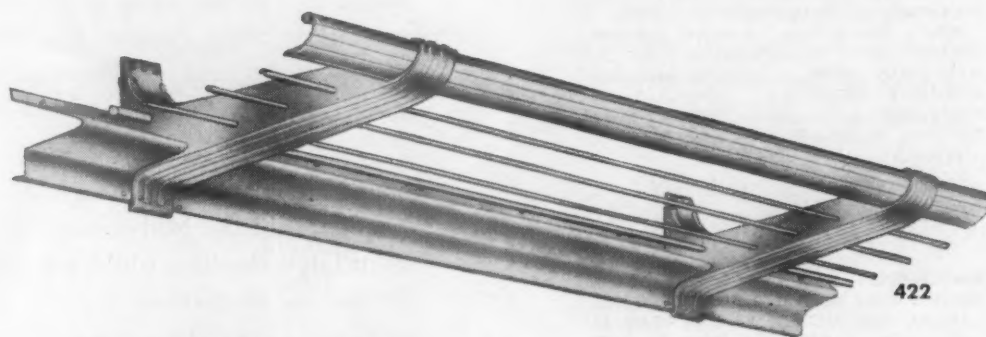
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448

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**Craftsmanship**



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## Current Statistics

Operating revenues, five months	
1953 .....	\$ 4,402,826,098
1952 .....	4,306,097,045
Operating expenses, five months	
1953 .....	\$ 3,333,902,343
1952 .....	3,354,709,662
Taxes, five months	
1953 .....	\$ 528,215,942
1952 .....	506,471,365
Net railway operating income, five months	
1953 .....	\$ 448,770,942
1952 .....	374,463,064
Net income, estimated, five months	
1953 .....	\$ 338,000,000
1952 .....	260,000,000
Average price railroad stocks	
July 21, 1953 .....	64.09
July 22, 1952 .....	63.07
Car loadings revenue freight	
Twenty-eight weeks, 1953 ....	20,320,312
Twenty-eight weeks, 1952 ....	19,555,803
Average daily freight car surplus	
July 18, 1953 .....	32,978
July 19, 1952 .....	44,450
Average daily freight car shortage	
July 18, 1953 .....	3,988
July 19, 1952 .....	1,524
Freight cars delivered	
June 1953 .....	6,463
June 1952 .....	6,411
Freight cars on order	
July 1, 1953 .....	52,315
July 1, 1952 .....	99,615
Freight cars held for repairs	
July 1, 1953 .....	95,768
July 1, 1952 .....	105,255
Average number of railroad employees	
Mid-June, 1953 .....	1,228,201
Mid-June, 1952 .....	1,225,134

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## Week at a Glance CONTINUED

**Certain Basic Principles** used by a successful operator of air freight, e.g., dependability and "predictability," might advantageously be applied also to railroad service. **50**

**That Hot Boxes Can Be Reduced** in number and frequency by a well-planned program of special attention to, and better servicing of, important trains is amply proved by the Santa Fe's experience. **51**

**One Way to Install** a new drawbridge span — using barges and tides — has been successfully employed by the Great Northern. **55**

**Box Car Mileage Will Be Reduced**—and the clerical expense of handling cars will probably be lowered also — by the Car Service Division's Special Car Order No. 90, now in effect. **58**

**A New Terminal and Garage** has recently been placed in service at Chicago by the Burlington Truck Lines — CB&Q truck subsidiary. **60**

**To Expand and Modernize**, Turkey's strategically important railways are spending millions of dollars. **64**

## BRIEFS

**A Special Stamp** to commemorate the 50th anniversary of the "trucking industry" will be issued by the Post Office Department October 27, 1953.

**Continuing the New Deal Pattern** of interference in affairs of the states, various federal government officials have taken sides with big truck operators in Pennsylvania in the effort of those operators to induce the legislature in that state to increase legal truck weight limits. Agriculture Secretary Benson and Defense Transportation Administrator Knudson are among federal officers who have sent telegrams to Harrisburg in advocacy of the cause of heavier trucking. Meantime, the



## Week at a Glance CONTINUED

federal court in Philadelphia has refused to accede to the Eastern railroads' motion that the Pennsylvania truckers' anti-trust suit for \$250 million against the railroads (founded largely on the railroads' opposition to pro-big-truck legislation) be thrown out of court.

**First Application of a Transistor** in railroad safety signaling, on the Pennsylvania, has operated without failure since it was placed in service April 14. Transistors—small devices about the size of the rubber eraser on a lead pencil, that can perform many of the functions of an ordinary vacuum tube—are a new development in the electronic field. They first became available commercially late in 1952. The transistor installed by the PRR is in "CQ" tower at Pittsburgh, where it receives indication code from a dragging-equipment detector at Eaton, Pa., 3.5 miles away.

**Returning Lost Military Traffic to the Rails** is the subject of intensive efforts now under way by various regional passenger committees and the A.A.R. Experienced observers—who won't allow themselves to be quoted—believe, however, that the railroads will have to offer even more attractive military rates if they wish to draw back the maximum volume of traffic.

**For Hire Trucking** was put under jurisdiction of the Illinois Commerce Commission by a bill signed by Governor Stratton July 10. The state's present division of motor carriers will be abolished and the commission will be given powers of rate and route fixing before January 1.

**Success of the Seminars** on preparing freight for shipment and loading and bracing of freight in cars, sponsored by the A.A.R.'s

Freight Loss and Damage Prevention Section at the association's container research lab at Chicago, is leading to plans for a similar series in 1954. Third of this year's series of four demonstrations is being held the week of July 27-31 at Chicago.

**It Is Reported** the higher \$2.40 per diem scheduled to become effective August first may be postponed until the first of September.

**Creation of an L.C.L. Research Group** within the Freight Station Section of the A.A.R. is a proposal due to be presented at the next meeting of the association's board of directors.

**U.S. Navy Personnel**, docked at the Western Maryland's Port Covington marine terminal in Baltimore for the July 4 weekend, received from the railroad a special greeting card, giving in concise form information on how to reach the center of the city, and calling attention to the fact that Port Covington occupies the site of Fort Covington, which was involved in the battle that led to the writing of the "Star Spangled Banner."

**Rapid Transit for San Francisco's Bay Area** counties will be the subject of a \$750,000 study to begin about September 1. Money for the project has come from nine counties of the area plus an appropriation of \$400,000 from the state legislature. The recently formed Bay Area Rapid Transit Commission and civic and city organizations will conduct the study.

**St. Lawrence Seaway Legislation** was not on the latest list of "must" legislation which Congress expects to complete prior to adjournment. The House Public Works Committee has taken no action on the matter since hearings were completed, and when the bill came up in the Senate on July 16 it was "passed over."

# Smart travelers are riding trains to destination... then using Rent-A-Car service on arrival



Use of the Hertz-originated Rail-Auto Plan is soaring everywhere! Final compilations for 1952 by Hertz Rent-A-Car System indicate that men and women who rented cars at their rail destinations last year *actually* traveled 136 million miles on trains! They averaged 800 miles rail travel per person, round trip!

Railroads who have joined with Hertz in steadily, enthusiastically promoting car rentals at destination as a wanted, needed travel service, know that it pays... *and big!* Hertz, too, knows it pays, for Hertz business has grown more than 5 times since 1947, when the first great Hertz campaign was launched, and a main factor is the phenomenal public demonstration for Rail-Auto service. Greater gains can be expected in 1953... everywhere increasing numbers of vacationers and business travelers particularly, already are piling up new records in destination reservations.

... off the highways and back on the trains!

How much of this new surge of Rail-Auto traffic comprises travelers who have... not for economy as many believed, or any reason other than desire or need for a car at destination... been driving long, tiring, often hazardous miles between cities in their own cars.

Questioning of car renters from 700 Hertz stations in more than 500 cities throughout the United States, Canada, Alaska, Hawaii, Cuba, Great Britain, Mexico, Haiti, the Virgin Islands and Switzerland show beyond a doubt that the number of such travelers is huge. They are *new* train travelers. They are reclaimed train travelers. They are delighted with the comfort and convenience of modern train travel. They are glad to be able to step from the train to a smart new car from Hertz, to drive as their own, as long as they wish, at surprisingly low rates. All gasoline and oil, Public Liability, Property Damage, Fire and Theft Insurance and \$100.00 deductible collision protection are included in the low rate—at no extra cost. There's no finer rent-a-car service anywhere.

Every railroad man is aware that city-to-city private auto travel totals not just hundreds of millions, but *hundreds of billions* of miles yearly, and deprives the railroads of more possible revenues than any other competitor. Many leading railroads are doing something about it... is yours? All railroads *must* if the job is to be 100% effective in tapping this great reservoir of potential profits. The job must be carried forward aggressively, consistently.

Many railroads have joined Hertz in aggressive promotion of Rail-Auto service... in their own advertising, timetables, ticket office displays, and other media... and, most important, encouraging ticket agents and other personnel to talk, sell this profit-producing, goodwill-building service.



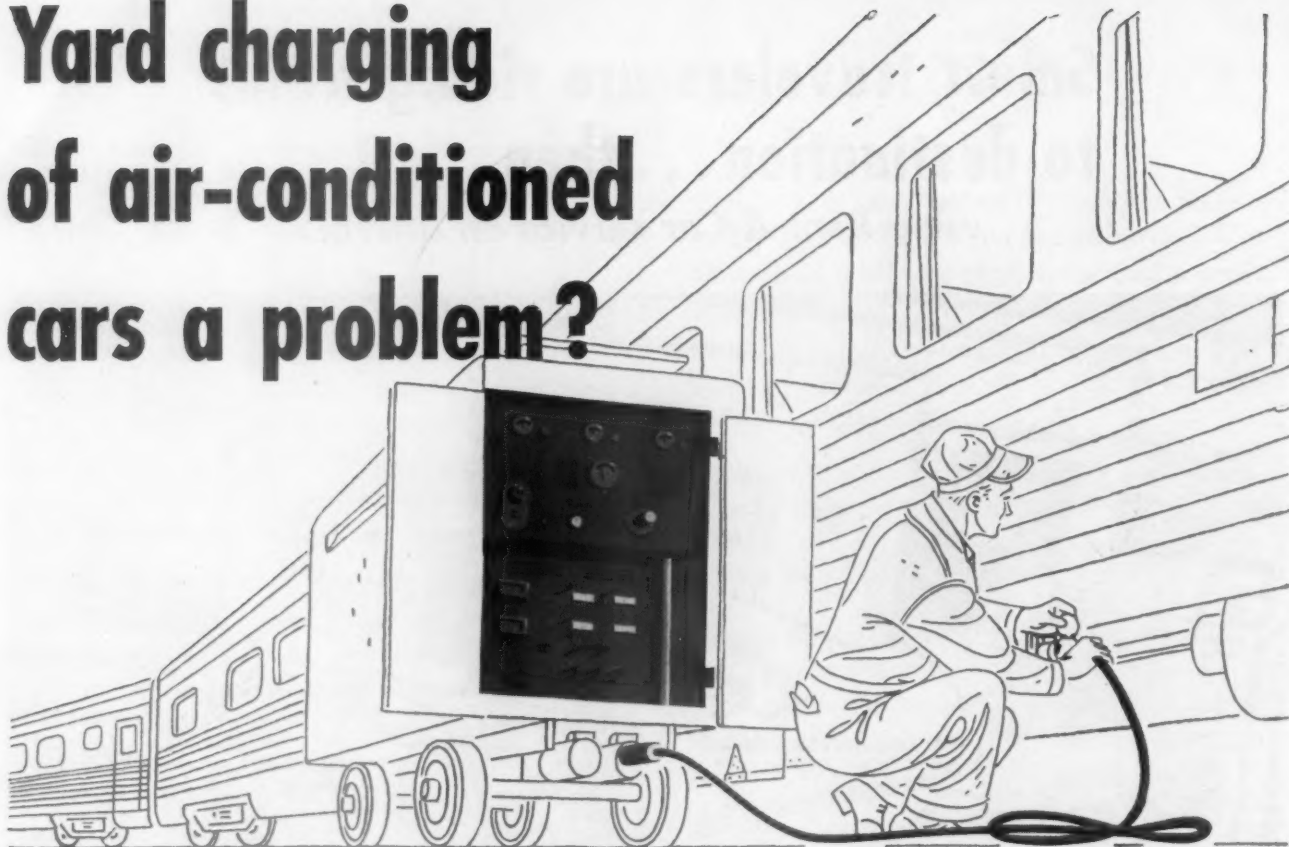
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**Superior road performance**—EDISON batteries have no prescribed discharge limits . . . accept generator output without *finish-rate limitations* . . . can safely be maintained in a high state of charge on the road . . . seldom require yard charging.

**Less weight**—An EDISON has the strongest construction known, for each cell is made of steel . . . inside and out. As a result, it withstands even the shocks incidental to freight-train service. Another big plus is its light weight which frequently saves as much as 2000 pounds per car.

**Extra long life**—In length of life, too, an EDISON is unusual. For instance, one of the

first railroads to adopt air-conditioning obtained 15 years of service on cars with electromechanical air-conditioning. Then switched these same EDISON batteries to head-end cars where they were recently reported still in operation.

Figure it any way you want . . . on freedom from trouble . . . superior road performance . . . less yard charging . . . less weight to haul . . . longer life, you just can't beat an EDISON. It's the most dependable battery you can buy . . . in addition, gives the lowest over-all cost. For more complete information, see your Edison field engineer—ask for Bulletin S.B. 3802. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N.J.



**Most Dependable Power—**

**Lowest Over-all Cost**

**... you get both with an EDISON**



# EDISON

Nickel · Iron · Alkaline  
STORAGE BATTERIES



## B. R. T. Favors "Trailers-on-Flats"

Movement would "revitalize railroads," "be good for business in general," Kennedy tells B.L.F. & E.

A national campaign to promote shipment of loaded highway truck-trailers by railroad flat car, "as a means of revitalizing the railroad industry through new and expanded business," has been proposed by the Brotherhood of Railroad Trainmen.

W. P. Kennedy, president of the B.R.T., addressing the current Boston convention of the Brotherhood of Locomotive Firemen & Enginemen on July 21, said he sees in movement of trailers by rail "a challenge of unprecedented importance" to the railroads.

The railroads, Mr. Kennedy said, not only have an opportunity of helping themselves but of performing a great public service by removing thousands of "highway boxcars" from public highways. He suggested that a national committee of rail labor, "progressive-minded" rail and truck shippers, the A. F. of L., the C. I. O., and farmer organizations be established to promote shipment of truck trailers by rail, and offered the B.R.T.'s technical and public relations staff assistance in setting up the group. "The trailer-by-flat car movement," he said, "will mean new business railroads have never had. It will mean more business for truckers in the forwarding and distribution of freight. The net result can only be good for business in general."

The B.R.T. president cited the New York, New Haven & Hartford as a carrier which has had the "foresight" to step into the trailer-by-rail field, and which last year "profitably moved" 34,000 trailers over its rails at lower rates than they could be driven over the highways. "It not only saved the shippers' money but the taxpayers' as well, who pay the lion's share of the upkeep of roads 'highway boxcars' destroy."

Mr. Kennedy added, however, that the New Haven has merely scratched the surface in this operation, since its flat cars haul only one trailer. [Special flat cars have recently been developed to carry two 35-ft. units.]

### Haven't Met Competition

In his speech Mr. Kennedy charged rail management with "dragging its heels so far as progress in railroad transportation is concerned" and with "failing to exercise initiative and resourcefulness when threatened by competing forms of transportation, particularly the highway truck."

"Up to this point," he said, management has "somehow managed to avoid good, old-fashioned American

free enterprise initiative. They have simply failed to meet competition." A great portion of the railroads' loss of business, Mr. Kennedy maintained, was the result of poor service instead of lower freight rates. "Instead of using technological advances," he declared, "to promote more business at cheaper rates and improved service, the railroads have actually done the opposite."

Using dieselization as an example, he said, "the new big diesels" are capable of hauling trains so long "you can't see from one end to the other," and that the carriers are doing just that. This, he charged, is driving additional business from rails to highways because railroads are delaying loaded freight cars to make up long trains of 150 cars or more. "This shows more profit per unit on the carriers books," he said, "but it doesn't

take into consideration the business that won't be back for the next train. Furthermore, it does not reflect the costly destruction of lading that results from slack action in an excessively long train. It also does not take into account the rising cost in personal injuries . . . brought on by the treacherous slack action."

The trainmen, their president emphasized, are not opposed to dieselization, but feel that it, like any other new tool of production, must be used to promote business—not kill it. "It's actually a paradox," Mr. Kennedy continued, "that the diesel, which should be giving railroads their greatest boom in history is, instead, giving them indigestion. . . . The railroads are on a treadmill in which they must inevitably lose ground if they pursue their present policies."

The union's prodding, Mr. Kennedy concluded, was being done as a friend of management—as a member of the railroad family. "We like our managements so well," he asserted, "that we don't want to see them commit suicide. We hope they'll appreciate our efforts."

## People in the News

### I. C. C. Gets Two New Members

Senate confirms Freas to succeed Lee less than week after Clarke takes office as successor to Patterson

The appointment of Howard G. Freas, of California, to the Interstate Commerce Commission was confirmed by the Senate on July 16, just six days after Owen F. Clarke, of Washington,

officially became a member of the commission on July 10.

Mr. Freas, who is expected to begin his new duties around mid-August, will succeed Commissioner William E. Lee,



Harris & Ewing  
Owen F. Clarke



Howard G. Freas

a member of the I.C.C. since 1930, whose final term expired last December 31. Favorable Senate action on the Freas appointment was in line with, and followed by only one day, a favorable recommendation by the Senate's Interstate and Foreign Commerce Committee. That group's approval, given after a three-minute hearing July 15, was noted on page 9 of last week's *Railway Age*—a report which included also a brief biography of the new appointee.

#### Mr. Clarke's Career

The other new commissioner, Owen F. Clarke, replaces former Commissioner William J. Patterson, whose retirement was also noted in the July 20 *Railway Age* (page 13). As Mr. Patterson's successor, Mr. Clarke, who is a former chairman of the Washington Public Service Commission, has been assigned to the I.C.C.'s Division 3.

Commissioner Clarke, 39, was born October 22, 1913, at St. Maries, Idaho. He was educated in Washington, and

received his law degree from the University of Washington in 1936.

Mr. Clarke practiced law at Yakima, Wash., from 1937 to 1941, and then served two years as deputy prosecuting attorney of Yakima county. After three years with the Navy, he returned to Yakima, where he was prosecuting attorney in 1946-1948.

In 1949 Mr. Clarke became chairman of the Public Service Commission and the Washington Toll Bridge Authority. He served in this capacity until 1951, and in September of that year returned to private law practice in Yakima as a member of the firm of Brown, Olson & Clarke.

The commissioner is a Republican, and was active in the Eisenhower campaign in his home state. He was state chairman of the Eisenhower Committee prior to the 1952 national Republican convention; served as vice-chairman of the state delegation at the convention, and was state vice-chairman of "Citizens for Eisenhower" after the convention.

ing World War II. Reparations were asked, and it has been estimated that such reparations, if granted, would run as high as \$2 billion.

Examiners Boat and Hosmer said the government paid \$6,204,238,000 in railroad freight charges during the years 1941-1946. It is clear, they added, that charges on wartime government traffic "on the whole were considerably lower than they would have been for commercial shipment."

Reduced rates were accorded the government under the Land-Grant Equalization Agreement, and by many Section 22 quotations, the examiners said. They noted that "equalizing railroads" did not withdraw from the agreement during the war lest their action be criticized as unpatriotic.

#### "Well Grounded" Fear

"From public statements of responsible government officials it is clear that this fear was well grounded," they added.

The I.C.C. examiners said representatives of the government seem to have felt that equalized land-grant deductions "were a kind of gratuity to which the government was morally if not legally entitled, not to be considered in the formulation of (rates)."

The Department of Justice contended in these cases that the two-year statute of limitations was not binding on the government, and asked for damages on shipments as early as 1941. The first complaint was not filed until 1946.

This view was also rejected by the examiners. They said the I.C.C. "has consistently held that there is no reason for interpreting this (two-year) provision as not applicable to the government."

The two examiners calculated that if the government were to win these cases, the estimated \$2 billion in reparations would be whittled down by tax credits

## Rates & Fares

# Examiners Deny U. S. Reparations

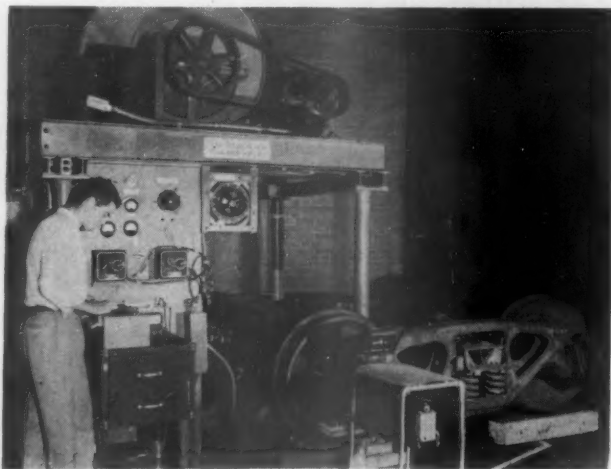
Two I.C.C. examiners favor dismissal of government cases involving World War II shipments

Dismissal of the 17 government reparation cases, involving World War II freight shipment, has been recommended by two Interstate Commerce Commission examiners.

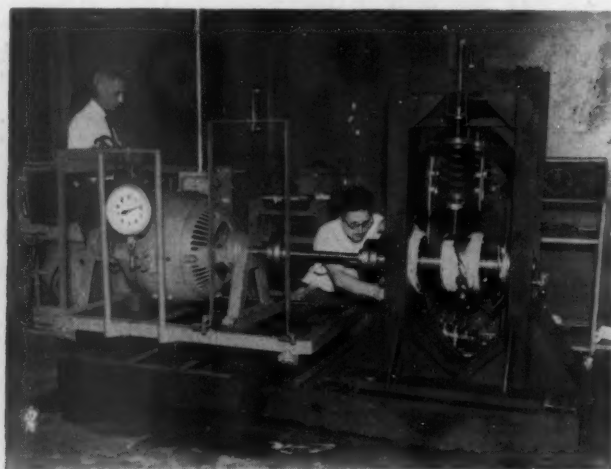
Marion L. Boat and Howard Hosmer advised the I.C.C. that the government complaints "should be dismissed."

Their recommendation was contained in a 205-page proposed report made public July 22.

The government complaints were filed by the Department of Justice from 1946 to 1948. They alleged that the government was overcharged by railroads on shipments of various commodities dur-



**TWO TESTING MACHINES** recently completed at the Armour Research Foundation of the Illinois Institute of Technology at Chicago for use in the \$275,000 A.A.R. sponsored project for study of the freight-car hot-box



problem. Left: A complete freight-car truck with air blown over for measuring journal-bearing temperatures under train-operating conditions. Right: Testing oils and methods of oil supply for freight-car journal bearings.



which would accrue to the railroads. They took "official notice" of a 1948 statement in which a Justice Department lawyer estimated net recovery would amount to "about 15 per cent."

"The net recovery on this theory would be \$300 million, which would be more than a third of the total net income of Class I railroads in 1952," they said.

In view of the statement on National Transportation Policy contained in the I.C. Act, the commission might well consider whether payment of \$144 million by the railroads to the government would be in accord with that policy, the examiners said.

"The question has not been regarded of material importance, however, in the conclusions hereinafter reached in this report," they added.

More than 61 parties intervened in these cases on the side of the railroads, including the National Industrial Traffic League, the Railway Business Association, railroad labor organizations and Chambers of Commerce. These groups said that wartime railroad earnings "represented only a moderate rate of return on investment."

The 17 reparations cases included four on "export rates," four on "transcontinental rates," and nine on "ratings and rates on various commodities" within this country.

The government complaints assailed export rules, storage-in-transit charges, and rates on such items as soldiers' packs, combat vehicles, steel and aluminum landing mats, airplanes and airplane parts, tents and paulins, pallets, woolen blankets, ammunition and explosives, cartridge clips and ammunition, and bomb cluster adapters.

In three of the cases—soldiers' packs, airplanes and airplane parts and steel cartridge clips and links—the Department of Justice not only sought reparations, but asked the I.C.C. to prescribe "reasonable rates for the future." On this point, Examiners Boat and Hosmer found present rates are not unreasonable.

### **I.C.C. Reopens Mail Pay Case for New Hearings**

The Interstate Commerce Commission has announced it will hold hearings on the recent railroad petition for increased mail pay (*Railway Age*, July 6, page 12). No date was set for such hearings.

The railroad petition asked for an increase of not less than 45 per cent, effective June 24, 1953. The petition is docketed as No. 9200, the same as the earlier mail-pay case decided in 1951.

Postmaster General Summerfield filed a reply to the railroad petition, urging its denial on grounds that railroads already are paid enough to transport mail. The reply embraced a cross-application, asking for relief in "certain cases" where the railroads are now being overpaid (*Railway Age*, July 20, page 13).

### **Shippers Dislike Terminal Charges, Poll Reveals**

It isn't that they want to deprive railroads of a just fee for their services, but shippers have a strong dislike for terminal charges imposed separately from road haul rates. Primary objection is that added charges complicate book-keeping and produce added confusion. It is better, shippers say, to have all a carrier's fees included in one overall charge.

These are some of the findings of *Railway Freight Traffic* in its July monthly traffic poll of industrial traffic managers and chamber of commerce traffic directors from coast to coast.

A majority of those polled said imposition of separate terminal charges is not in the best interest of either carriers or shippers. This majority group included about half those questioned on the topic.

One of the minority groups opined

that railroads would be the only ones to benefit by a separate charge, because it would give them an increase on l.c.l. without the formality of applying for such an increase on a straight-rate basis.

This group felt application of a separate charge would drive many companies now using free pickup and delivery service to inaugurate their own drayage system or to transfer much of their traffic to motor carriers—either way causing the railroads to suffer.

A second minority group of pollees had a different viewpoint. They felt shippers would benefit from separated charges in that such charges place the cost upon traffic generating it, instead of upon all traffic (whether using p.u. & d. service or not).

A very few respondents thought the individual charge would be an advantage. Their reason: Shippers and receivers would have the choice of service for which they would pay according to their needs.

## **Advisory Board**

### **More Device Cars, Say Midwesterners**

Advisory board urges more cars "designed to prevent damage"; flat car supply criticized

"That all Class I railroads should enter the field in producing specially equipped cars designed to prevent damage—such as 'Compartmentizer' and 'D-F' cars," and that "all carriers should assume their proper share of such equipment," were urged by Midwest Shippers Advisory Board at its meeting in Milwaukee July 16. Introduced by Edwin A. Olson, general traffic manager of Libby, McNeill & Libby, the resolution contended that special cars "are necessary to prevent damage to lading under present methods of operation, and to afford proper protection of goods handled..."

General Chairman M. I. Adams, traffic manager of Cutler-Hammer, Inc., presided over a meeting marked by special attention to supply of flat cars for heavy agricultural implements. Ervin Manske, general traffic manager of Allis-Chalmers Manufacturing Company, charged that, while the tractor business has been good in recent years—"at least ours has," the supply of flat cars for their movement has not. He reported that, "entirely because of the shortage," he had to turn to a contract trucker, "who had five pieces of equipment, and would have been happy to stop with 10," but who now operates 50 units in his service. Now used to the delivery of tractors by truck, "our dealers won't be satisfied with anything else." He reported that he presented this fact to the "able vice-president" of a western railroad and received the

reply that "I must agree that the facts you cite do not make pleasant reading for railroad men."

Clayton F. Devine, traffic director of the Silica Sand Traffic Association of Illinois, remarked: "I've been hearing about a tight car situation for the past 15 years; when are we going to get into the clear?" Mr. Devine also expressed the opinion that every railroad ought to give automatic notification to shippers of cars gone bad order. "We do it for our customers; why don't the railroads do it for theirs?"

#### **Clean Car Campaign**

Morris Rose, traffic manager of Inland Steel Products Company, reporting on the "clean car" campaign, urged adoption of a placard (which would be attached to cars for loading) reading: "Load promptly; unload promptly; always remove dunnage, strapping or other debris after unloading. Please do your part to keep cars moving. Save car-days and increase the car supply."

Adoption of a uniform unloading report, with copies to be sent by the receiver to the shipper and to the delivering railroad, was urged by F. A. Kilker, freight claim agent of the Burlington. He pointed out that 85 per cent of the \$92-million railroad claim bill in 1952 applied to carload freight, the policing of which is difficult. H. E. Stringer, assistant to chairman, Car Service Division, Association of American Railroads, added that the



plan for an unloading report "would have to be 'sold' to some railroad men as well as shippers."

That railroads are paying claims for damage for which they are not responsible was the suggestion of A. C. Shaw, traffic manager of Curtis Companies, who cited cases where receivers "loaded" claims on railroads for damage incurred in production or storage. He urged the roads to put on more inspectors and to look over more cars when they are set out for unloading at shippers' sidings; they would save money thereby. He complained also that he was unable to inspect the tapes

of railroad-owned impact registers which would enable him to check where damage occurred on carload movements.

A proposal that railroads give to a central agency—similar to tariff publishers—the job of preparing and distributing a national routing guide for l.c.l. freight was the suggestion of Harold T. Reed, director of traffic, Line Material Company. He claimed individual railroad merchandise booklets vary widely in format, contents and scope, and that the shipper could never be sure whether his copy is up to date or if he has missed a supplement.

## Operations

### Gass Optimistic on Car Outlook

Installation of 775 covered hoppers in June was timely, and supplies of other cars continue adequate

Installation of 775 new covered hopper cars when demand was at a peak was an outstanding equipment accomplishment during June, Arthur H. Gass, chairman of the Car Service Division of the Association of American Railroads, reported last week.

Writing in the latest issue of "The National Transportation Situation," Mr. Gass said covered hopper installa-

tions in June were higher than any month of record, except March 1949. Class I roads and their subsidiary car lines installed 5,770 freight cars of all types in June.

Heavier-than-normal retirements, amounting to 5,498 cars, almost nullified new-car installations, Mr. Gass reported. He said cars awaiting or undergoing repairs "increased somewhat"

during June, but the July 1 figure of 95,768 cars still was lower than a year ago.

Freight cars owned by Class I roads showed an increase of 4,507 cars in the year ended July 1, 1953. This, together with the drop in bad orders, left serviceable ownership better by 13,994 cars than it was a year ago, Mr. Gass said.

Discussing the current car situation, the C.S.D. chairman reported the supply of open top cars of all types "is presently satisfactory." This has resulted from industry-wide vacations in several industries, including the coal mines. For this reason, he said, the present satisfactory situation "is considered temporary and may change quickly."

#### Box Car Supply

Box car supplies, meanwhile, have become tighter. Mr. Gass said total box car loadings this year are running slightly above 1952, and in some cases recently demand has exceeded supply. Shortages have occurred in top-grade box cars.

Handling of this year's wheat crop has proceeded "with minimum of car supply difficulties," although the simultaneous movement of old grain by the Commodity Credit Corporation "added to the difficulties." Mr. Gass noted that total wheat production this year is estimated at 1,174,708,000 bushels, 9 per cent less than last year.

Mr. Gass praised the work of the terminal operating committees and the "excellent cooperation" by all parties in the handling of this year's grain crop. He noted that Special Car Order 88 has been amended to eliminate eight railroads, leaving the order applicable to only seven Northwestern carriers. He said this should enable those roads to build up their car supply to meet growing demands in that area.

Detention reports from railroad agents indicated that cars detained beyond free time of 48 hours averaged 17.24 per cent of those placed in June. That compared with 16.70 per cent in May, and with 19.86 per cent in June 1952, when strikes helped raise the average.

Net ton-miles per serviceable car per day averaged 1,003 in May, compared with 973 in the same month of last year.

#### CNR to Extend Rail-Highway Service

The Canadian National will extend its railway-highway freight service to include service between Montreal and Hamilton, Ont. Its initial rail-highway operation was introduced between Montreal and Toronto last December.

Twelve additional 22-ft., 12-ton trailers have been purchased for use in the extended overnight merchandise freight service. Six additional flat cars have been especially equipped to transport the trailers between railway terminals.



**LARGEST JAMBOREE YET.**—Nearly 80 special trains brought 30,000 Boy Scouts from all over the U.S. and from 14 foreign countries to Newport Beach, Cal., for scouting's Third National Jamboree at nearby Irvine Ranch. A New Jersey troop, here unloading at the Santa Fe's Fullerton

station, is typical of a scene that occurred over and over at several Santa Fe, Southern Pacific and Union Pacific stations in the area. Western roads reported their biggest headache in running the specials was milk; where to find enough to satisfy an infinite Boy Scout capacity for it.

## SP Adds Radio-Telephone For "Cascade" Passengers

Two-way commercial telephone service has been made available to passengers aboard the Southern Pacific's "Cascade" between San Francisco and Portland.

The cost of a phone call from the train is about the same as that for a daytime person-to-person call from a home or office according to the Pacific

Telephone & Telegraph Co., whose communication network is handling the radio-telephone service.

Train phone booths have been installed in dining cars of the two train sets. The phones are coin operated. Calls are handled through phone company radio stations at Oakland, Sacramento, Portland, Eugene and Salem.

A similar telephone service has been in effect for some time on the SP's overnight "Lark" between San Francisco and Los Angeles.

the needed device or key for flexible adaptation of the circulation rate to the demands of the moment, whether normal or fall peak, whether in boom or in wartime."

## Traffic

### I.C.C. Broadens Definition Of "Exempt" Commodities

The Interstate Commerce Commission has broadened its definition of "agricultural commodities" to include cleaned or scoured wool and mohair and redried leaf tobacco. The action places these commodities among those which are "exempt" from regulation under Section 203 (b) (6) of the I. C. Act.

## New-Type Freight Cars Needed

**E. G. Plowman decries over-concern with number of cars —Suggests more emphasis on need for new types, as well as use of better materials and techniques for repair**

There has been too much concern about the size of our freight car fleet and not enough about the need for new types of freight cars and improvements to existing cars, E. G. Plowman, vice-president and general traffic manager of the U.S. Steel Corporation, said in St. Louis on July 13. Mr. Plowman, addressing the National Defense Transportation Association, cited a need for gondola cars with steel floors and for gondola cars with wooden or composite wood and steel nailable floors.

"There is need for a well-designed box car for carload packaged and bundled commodities," he continued, "and there is need for a well-designed box car for bulk and bag loading. These two types of use have different design requirements. As one observer, it has long been my belief that the effort to maintain one general box car pool is holding back progress. What is needed is recognition of two kinds of box cars and construction of a generous supply of both kinds."

### Car Condition

Mr. Plowman added that the present fitness of the nation's entire box car fleet is too low, and that the same condition exists with gondola and other open-top cars. Railroad officers, he said, rightfully attribute part of the poor condition of open-top cars to shipper practices, but the situation is a challenge to car design and maintenance engineers to improve specifications to resist or offset car-damaging practices.

"It should not be uncommon for the right car to be available when needed for a load," Mr. Plowman emphasized, "and it should be standard practice for this correctly designed and maintained car to carry its lading through to destination in the predicted time and without damage. Better solution of this problem requires construction of new types of cars. It requires use of the better materials and techniques available not only for car construction but also for repair and maintenance. It also depends on proper use and ob-

servance of car service and other rules that govern freight car distribution and usage."

The U.S. Steel executive concluded by saying he thought adoption of a nation-wide system of pre-classification of both loads and empties might well be the long-sought key to the problem of always having the right freight car in the right place at the right time. "The sluggishness of movement of railroad cars, especially when empty, needs no proof. Pre-classification might offer

## Figures of the Week

### Freight Car Loadings

Loadings of revenue freight in the week ended July 18 totaled 791,414 cars, the Association of American Railroads announced on July 23. This was an increase of 69,960 cars, or 9.7 per cent, compared with the previous week;



**LARGEST TANK CAR** yet built made its public debut at the recent railroad equipment exhibit in Atlantic City. Manufactured for the Canadian Pacific by the American Car & Foundry Co., the car is the first of an order for 65 units (*Railway Age*, June 15, page 134). Shown as they

inspected the car at Atlantic City are N. R. Crump (center), CPR vice-president; B. W. Roberts (right), vice-president, purchases and stores, and J. N. Fraine, assistant to president. The car carries 16,000 Imperial gallons and is slightly over 51 feet long.



an increase of 182,414 cars, or 30 per cent, compared with the corresponding week last year; and a decrease of 13,964 cars, or 1.7 per cent, compared with the equivalent 1951 week.

Loadings of revenue freight for the week ended July 11 totaled 721,454 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, July 11			
District	1953	1952	1951
Eastern .....	119,520	93,328	128,426
Allegheny .....	146,443	85,527	161,719
Poconos .....	47,908	39,289	55,792
Southern .....	107,583	106,633	119,912
Northwestern .....	127,755	67,663	131,886
Central Western .....	117,080	121,971	121,466
Southwestern ..	55,165	57,951	60,107
Total Western Districts .....	300,000	247,585	313,459
Total All Roads .....	721,454	572,362	779,308
Commodities:			
Grain and grain products .....	57,371	69,822	54,689
Livestock .....	5,639	5,876	7,325
Coal .....	101,494	82,349	120,663
Coke .....	12,653	3,855	15,937
Forest products .....	38,696	41,178	42,768
Ore .....	93,555	11,556	88,699
Miscellaneous .....	62,927	64,737	68,749
July 11 .....	721,454	572,362	779,308
July 4 .....	670,232	447,516	588,159
June 27 .....	818,450	646,480	821,615
June 20 .....	812,578	643,969	832,942
June 13 .....	797,425	631,042	826,883
Cumulative total 28 weeks .....	20,320,312	19,555,803	21,285,780

**In Canada.**—Carloadings for the seven-day period ended July 7 totaled 70,474 cars, compared with 110,357 cars for the previous nine-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
July 7, 1953 .....	70,474	29,416
July 7, 1952 .....	71,901	27,488
Cumulative Totals:		
July 7, 1953 .....	2,009,668	857,381
July 7, 1952 .....	2,076,003	898,709

## Labor & Wages

### Court Order Ends Old Jurisdictional Dispute

An 11-year-old jurisdictional dispute between two railroad brotherhoods and a transit employees' union, which has affected operations of the Chicago North Shore & Milwaukee within the city of Chicago since 1942, has been ended by a court order. The order will allow North Shore crews to operate their trains into Chicago instead of turning them over to Chicago Transit Authority crews at the city limits—as has been done since the dispute began.

North Shore President J. H. M. Clinch estimates the order will save the company about \$250,000 a year in operating costs. It affects about 50 transit authority employees who have been handling the North Shore trains exclusively.

The dispute began when train-service employees of the North Shore became



**A LOSS AND DAMAGE CONTEST** conducted by the Santa Fe from April to June brought a record 5,518 suggestions. Open to all Santa Fe employees except company officers, the contest offered \$7,500 in cash prizes, including a grand prize of \$500. Pointing out that the number of shipments lost and damaged on Santa Fe lines "has reached an all time high," the contest application form requested "ideas—regardless of how simple they may be—that will assist all of us with this serious problem. Money settlement is an unsatisfactory substitute for freight that has not been delivered to the customer in good shape. As a result, Santa Fe loses shippers—and your job is affected."

Here, checking over the stacks of entries, are the three judges: C. A. Naffziger, director of the Freight Loss and Damage Section of the Association of American Railroads; C. R. Tucker, vice-president in charge of operations for the Santa Fe; and H. E. Chapman, general chairman of the National Management Committee of the National Association of Shippers Advisory Boards. They were impressed with the entrants' "sincere, profound and thoughtful study of the subject and their remedial suggestions." The 113 prizes included one each of \$500, \$300 and \$200, plus 10 of \$100, 20 of \$75 and 80 of \$50. All entries were mailed right to Santa Fe President F. C. Gurley.

members of the Brotherhood of Locomotive Firemen & Enginemen and the Brotherhood of Railroad Trainmen in 1942. Prior to that time both North Shore and elevated crews belonged to the Amalgamated Association of Street, Electric Railway & Motor Coach Employees (A. F. of L.). When the brotherhoods took over representation of North Shore crews, the elevated employees (including tower operators, etc.) immediately refused to permit North Shore trains to operate into Chicago. As a compromise, it was ultimately agreed to allow North Shore crews to operate on elevated lines to the Chicago city limits only. From that point, elevated crews took over.

Last year the North Shore filed suit against the transit union charging that this arrangement interfered with the road's contract with the Chicago Transit Authority, present operator of the elevated system. The suit charged that this interference constituted a secondary boycott.

Late in May, a master in chancery recommended an injunction be granted compelling the transit crewmen to permit North Shore crews to go through. But the court order, agreed to by both the transit union and the road, has obviated the need for such an injunction.

## Law & Regulation

### Fracas in Fresno; City Seeks Rail Consolidation

The city and county of Fresno (Cal.) are looking for ways to speed automobile traffic in and around the Fresno metropolitan area. They have come up with a rail consolidation plan whereby the Santa Fe would be required to abandon some nine miles of present trackage and build connecting trackage to operate over a line of the Southern Pacific. This, say the city and county, would eliminate many heavily traveled grade crossings, thereby speeding vehicular traffic.

But the Santa Fe is opposed to the plan for several reasons. In a statement issued in booklet form to taxpayers of the area, the road cited the facts that:

- Overall cost of such a project would be between \$30 and \$40 million.

- In presenting their plan to the California Public Utilities Commission, the city and county left a loophole by which taxpayers could avoid paying for any part of the project.

- The Santa Fe has a plan of its own—which involves relocation of its pres-



ent trackage and construction of grade separation at major arteries, at a cost of only about \$5 million.

- Present SP trackage has grade crossings at a number of major streets which would be blocked even more frequently than at present if Santa Fe traffic operated on this route.

- The consolidation plan would boost operating costs for the two roads by about \$280,000 a year.

- There is little need for a joint passenger station (as the city and county have claimed) because there is little interchange of passenger traffic between the two roads at Fresno.

The city has complained to the California commission that the Santa Fe's city franchise has expired and thus operations within the city are presently illegal. To this the road has replied that the Interstate Commerce Act will not allow abandonment of any interstate railroad line without an order from the I.C.C.

The road is now seeking to have the city-county joint complaint dismissed by the California commission on jurisdictional grounds. The SP has sided with the Santa Fe since the case began.

## Equipment & Supplies

### FREIGHT CARS

The **Pennsylvania** is inquiring for from 100 to 300 70-ton covered hopper cars.

The **Texas Mexican** has ordered 20 70-ton 52½-ft. drop-end gondola cars from the Pullman-Standard Car Manufacturing Company at an estimated cost of \$145,000. Delivery is scheduled for the second quarter of 1954.

### LOCOMOTIVES

#### 1,296 Locomotive Units Installed in 6 Months

Class I railroads installed 1,296 new locomotive units in the first six months of 1953, the Association of American Railroads has announced. Included were 1,286 diesel units, one gas turbine-electric, and nine steam locomotives. In the first half of 1952, the announcement added, Class I railroads installed 1,770 new units of motive power, all of which—except eight steam, two electric and four gas turbine-electric locomotives—were diesels.

Motive power installations in June by Class I railroads totaled 194 units, including one steam locomotive and 193 diesels, compared with June 1952 installations of 276 diesel units and two steam locomotives. In May, 258 units of motive power were placed in service, including 257 diesels and one steam locomotive.

Class I railroads had 570 new locomotive units on order July 1, including 536 diesel units and six steam, 10 electric and 18 gas turbine-electric locomotives. On the same date last year, Class I railroads had on order 1,362 diesel units and 26 steam and six gas turbine-electric locomotives.

## Supply Trade

**Douglas Grymes, Jr.**, manager of railroad sales of the wood preserving division of **Koppers Company**, has been appointed sales manager, with responsibility for both railroad and commercial sales. **J. M. Irvine**, manager of commercial sales, has been named project manager. **Robert H. Devine**, assistant manager of railroad sales, has been appointed assistant to



Douglas Grymes, Jr.

manager of the consolidated sales department with continued responsibilities in railroad sales work. Mr. Grymes worked with the Ayer & Lord Tie Co., which later became part of Koppers' wood preserving division; after various sales assignments, he was assistant manager of railroad sales for three years until December 1952, when he became manager of railroad sales.

**Aeroquip Corporation**, Jackson, Mich., has enlarged its operating facilities through purchase of a one-year old plant with 45,000 sq. ft. of space, at Van Wert, Ohio.

The **Hy-Test Shoe Company**, division of International Shoe Company, has opened a "safety shoe" warehouse in Philadelphia, in charge of **Milton Clark**.

**Orton Crane & Shovel Co.**, Chicago, has appointed **Industrial Handling Associates**, Cleveland, as representatives for that area.

**A. H. Candee**, who recently retired as transportation engineer of the **Westinghouse Electric Corporation**, has been appointed motive power consultant for the **National Supply**



**FRED W. HOLSTEIN**, general manager of sales and engineering for the **Rails Company**, who has been elected vice-president, with headquarters as before at Hoboken, N.J.

**Company**, engine division, at Pittsburgh.

**J. R. Johnstone** has been appointed manager, carbon products sales department, **National Carbon Company**. Mr. Johnstone has been with National Carbon since 1937, holding various sales and administrative positions.

**Lord Manufacturing Company** has moved its Detroit field engineering office to 2842 West Grand boulevard.

**Fab-Weld Corporation** has appointed **Ralph W. Payne Company**, 613 Fifteenth street, N.W., Washington, D.C., as regional railroad representative in the Southeast.



**FREDERICK F. FRANKLIN**, who has been appointed manager of transportation development, **Vanadium Corporation of America**, at Chicago. Mr. Franklin joined Vanadium in 1944, but since 1951 has served in various capacities with the **National Production Authority** and affiliated agencies. He was chief of the Ferroalloys section and assistant director of the Iron and Steel division at the time of his recent appointment.



**JAMES R. BYRNE**, assistant operations manager of Evans Products Company's railroad loading and equipment division, who has been appointed assistant sales manager of that division.

**Lee W. Melcher**, for 20 years head of the refrigeration and railway division of the **Waukesha Motor Company**, will retire July 31.

**W. L. Sheffield** has been appointed chief engineer of **Lewis-Shepard Company**, Watertown, Mass. Mr. Sheffield was chief engineer of the research and development section of **Anderson-Nichols & Co.**, Boston.

**Donald R. Ward**, director of manufacturing schedules, **Evans Products Company**, has been appointed assistant to president.

The Wood Preserving division of **Koppers Company** plans to erect a new wood preserving plant at Horseheads, N.Y., as soon as local permits are granted.

#### OBITUARY

**Robert C. Augur**, 87, former managing editor of the *Locomotive Cyclo-*



**Robert C. Augur**

*lopedia* and the *Car Builders' Cyclopedia*, published by Simmons-Boardman Publishing Corporation, died

at his home in Suffern, N.Y., July 16. Born in New Haven, Conn., Mr. Augur was graduate from Sheffield Scientific School, Yale University, in 1887, with a Ph.B. degree. He was employed for several years on the Chicago, Burlington & Quincy; and later was assistant mechanical engineer and chief engineer of the New York Air Brake Company; resident engineer of the Westinghouse Air Brake Company, and engineer of tests for the American Brake Shoe Company. He was also employed as director of inspection, Westinghouse Electric Corporation, at Philadelphia, and as installation engineer, propelling machinery, Federal Shipbuilding Company. From 1920 to 1948 he was managing editor of the *Locomotive Cyclopedia* and *Car Builders' Cyclopedia*, and thereafter consulting editor until 1951, when he retired.

## New Facilities

### GN Expanding Freight Car Shops

A contract has been awarded for construction of an addition to the Great Northern's freight car shops at Waite Park, near St. Cloud, Minn. "Expanding use of steel cars in freight service" was cited as the reason for building the added facilities.

The addition will be an entirely new building 200 feet by 305 feet, with a connected addition 54 feet by 110 feet. It will be used for assembling steel parts for new freight cars being built at Waite Park. Construction work will be done by the M. E. Souther Construction Company, St. Paul, and will require about a year to complete.

The main structure will have a maximum height of 48 feet, including crane bays. It will be single-story, of brick, steel and glass block construction. The smaller addition will have two stories and will house lunch and locker rooms, offices, conference quarters and tool storage space. Heating will be by steam with mechanically operated equipment for both heating and ventilation.

### Chicago, Rock Island & Pacific.

—Because of an unusual subsurface condition in the East Nishnabotna river at Atlantic, Iowa, it has been necessary to replace a concrete bridge pier built for the Rock Island's new cutoff and to install concrete struts, at a cost of \$43,000. The work is being undertaken by List & Weatherly. Ten stone jetties are being placed along the Kansas river at Willard, Kan., by Grosshans & Petersen, Inc. (\$28,200). Armco tunnel liner plates are being used in repair of a stone arch culvert at Seneca, Ill., by Wolfes-Jensen & Co. (\$29,600). The Austin Bridge Company is constructing a viaduct at Third avenue,

Amarillo, Tex. (\$31,597). Grading and drainage for industrial trackage in a new industrial district at Dallas, is being carried out by Allhands & Briley (\$32,929).

### Denver & Rio Grande Western.

—The new \$4,000,000 classification yard at Grand Junction, Colo., began full-time operation July 6 (*Railway Age*, March 31, 1952, page 60). The "hump and retarder" type yard has 24 classification tracks with capacities ranging from 20 to 125 cars, with all switches remotely controlled. Other tracks provide for incoming trains, making up departing trains, repairing, washing, icing and fueling.

### Kentucky & Indiana Terminal.

—Has ordered from the General Railway Signal Company equipment for installation of a relay interlocking at "JN" interlocking, Louisville, Ky.

### Minneapolis, St. Paul & Sault Ste. Marie.

—Division 4 of the I.C.C. has authorized this road to relocate a segment of branch line extending from a point west of Parshall, N.D., to Sanish, 14.1 miles. A new segment, 13.7 miles, has been constructed by the federal government as a replacement. Area occupied by the old line will be flooded by waters from Garrison Dam at Riversdale, N.D. The town of Sanish is being moved to a point on the new segment known as "Newtown."

**New Orleans Public Belt.**—Work will begin soon on construction of tracks to serve the new \$2.5-million Thalia St. wharf, although the dock itself will not be completed until some time in 1954. Two tracks, one 1,180 feet long and the other 940 feet long, will be built at a cost of \$23,000. They will provide a double spotting facility with a capacity of about 36 cars. The first track will serve as a material track during the period of wharf construction.

**Norfolk & Western.**—Grain storage facilities which will increase the capacity of the N&W's elevator at Sewalls Point, Norfolk, Va., to over two million bushels, will be built immediately by the James Stewart Corporation, Chicago. Total cost will exceed \$1,000,000, including incidental work to be done by N&W forces. The contractor is expected to finish the job by next May. The N&W's intention to increase grain storage facilities was reported in *Railway Age*, June 8, page 20.

The additional elevator space will have a capacity of 1,278,730 bushels. Present capacity is 750,000 bushels. There will be 32 new grain storage bins, each 24 ft. in diameter inside, and 106 ft. high. Conveying machinery and an additional grain drier also will be installed. When completed, the new facilities will be placed under long-term lease to the Continental Grain Company, holder of the lease on the present elevator. They will continue to be operated as a public facility. (Continued on page 66)



HE SAVED



ON A BEARING,

BUT WIPED OUT



You'll find Electro-Motive delivers top-quality parts at a price that compares favorably with any others. But once in a while you'll get a chance to "save" a few pennies on one item or another offered by some other source.

Take the case of one railroad that bought bearings for 3¢ less than Electro-Motive's price. After three weeks' service, a bearing wiped out, checking and scoring the crankshaft. Then the bearing seized and snapped the con rod. Total loss—new shaft, new

rod, labor and lost locomotive time—came to \$9,780.

When you buy General Motors locomotive parts from Electro-Motive, you get parts that are rigidly inspected, expertly packaged and protected against rust and corrosion. You also get a warranty of 100,000 miles or one year's service, whichever occurs first.

Why take a chance on substitutes? The pennies you "save" can cost you dollars. In this case they cost \$9,780.

HERE'S WHY IT PAYS TO  
BUY GENUINE

**EMD PARTS**

- **Proved Quality**—Designed, engineered and tested by the locomotive builder.
- **Warranty**—100,000 miles or one year's service, whichever occurs first.
- **One Low Price Regardless of Volume**—Buy only what you need.
- **Scientific Packaging**—Protects against damage in shipping and deterioration in storage.
- **Continuing Improvements**—Over a 15-year period, an 800% increase in piston life, for example.
- **Strategically Located Warehouses**—Cut railroad shipping costs, reduce inventory requirements.
- **One Source**—One Responsibility for every GM locomotive part.

ELECTRO-MOTIVE DIVISION



GENERAL MOTORS

La Grange, Illinois—Home of the Diesel Locomotive • In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario







Refrigerator car, owned and operated by Wilson Car Lines, who cooperated with ASF by keeping records of service duration and car mileage. Beam shown above is one of the four removed from this car.

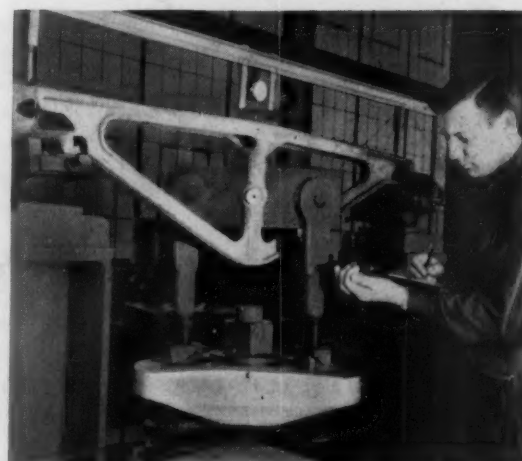


◀ **20% above requirements—  
on the AAR Static Test**

Only .056" deflection at 18,000 lbs., compared to permissible .070" deflection. Two of these beams were then loaded to the breaking point—which proved to be almost four times their rated capacity!

**38% above requirements—▶  
on the AAR Fatigue Test**

The two remaining beams withstood an average of 1,032,181 loadings—well over a quarter of a million more than required for AAR certification. (Each loading 18,000 lbs., applied at the rate of 50 per minute.)



Unretouched close-up of ASF Unit Beam—after 34 months and 119,503 miles under a Wilson Car Lines Refrigerator Car. Measurements showed that alignment and metal thickness were closely comparable to those of a new cast-steel beam.

You'd think this ASF Cast-Steel Unit Beam was brand new instead of three years old . . . because test results proved

## After 119,503 miles ... still above AAR specifications!

Some just-completed tests of ASF Cast-Steel Unit Brake Beams will interest every railroad looking for ways to cut maintenance costs.

The beam shown here is one of a set that has traveled 119,503 miles during 34 months—on a Wilson Car Lines Refrigerator Car. Refrigerator service was deliberately chosen for the test because brine-induced corrosion makes it extra tough on running gear.

Before testing, the four beams were shot-blasted to remove rust and scale. Measurement showed practically no loss of dimension or misalignment—and extremely light wear, considering length of service. For example, unit extensions were only about 1/16" undersize! And, *here are the results of static*

*and fatigue tests—made according to AAR specifications:*

	STATIC TEST		FATIGUE TEST	
	Deflection at 18,000 lbs.	Set, after 30,000 lbs.	Maximum load before fracture	18,000 lb. loadings
AAR Requirements	.070"	.010"	(None)	750,000
Average performance of ASF Unit Beams in service 3 years	.056"	.0012"	68,950 lbs.	1,032,181

In short, still far above standards! Find out more about the beam that *maintains* its strength and shape during *prolonged service* . . . and *reduces your maintenance and replacement costs*. Write us, or ask your nearest ASF Representative for more information!


*Like modern side frames that replaced arch bar trucks . . .  
the MODERN BRAKE BEAM is the*



**One-Piece Cast-Steel  
UNIT BRAKE BEAM**

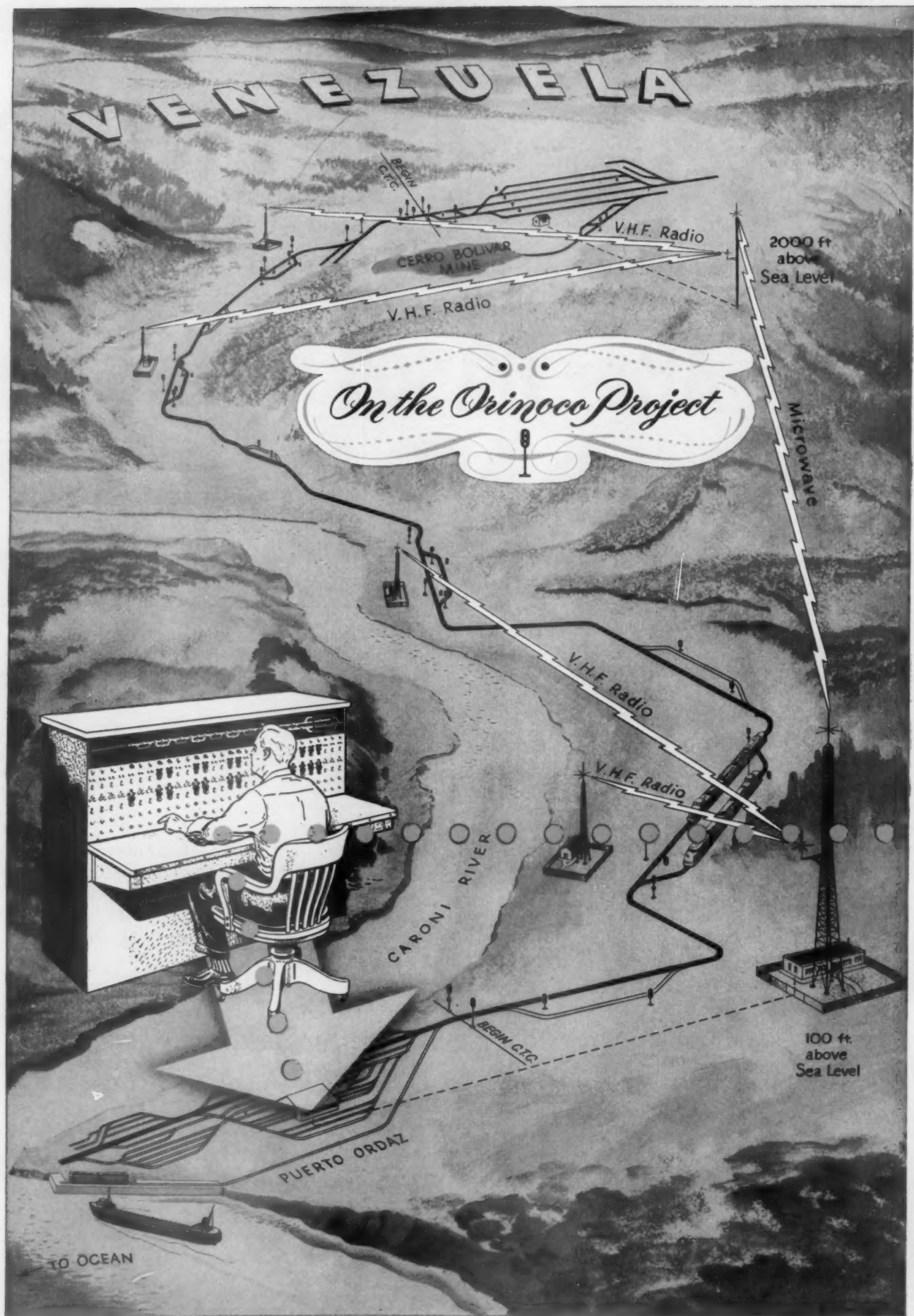
**AMERICAN STEEL FOUNDRIES**

410 North Michigan Avenue, Chicago 11, Illinois

Look for this MINT  MARK on the running gear you specify

Canadian Sales: International Equipment Co., Ltd., Montreal







# LOOK

## C.T.C. and no line wires

It actually started back in 1946 when four leading companies got together to try an unusual experiment in railroad operation. Union Switch & Signal, Radio Corporation of America, Western Union and the Pennsylvania Railroad set up a 900-mile C.T.C. control circuit. By overhead and underground wire, it ran from Brady (near Pittsburgh) to Washington and on to Philadelphia. Then the coded signals were sent to New York by radio, and back to Brady again over line wires.

● To control the two sidings nearest Puerto Ordaz, the coded signal is sent to the tower through a multi-conductor cable 3-miles long. This signal keys a 2.9 Kc. US&S transmitter which in turn drives the radio transmitter.

● To control the other two sidings, the output of the 2.9 Kc. US&S transmitter keys a special FM radio transmitter and is sent to the tower on Cerro Bolivar. The signal is demodulated and sent to the two sidings by the same type of radio equipment used for the two sidings near Puerto Ordaz.

It was the longest C.T.C. control circuit ever used; and it worked.

Now, a system inspired by these tests has been designed for the new railroad being built in Venezuela by Orinoco Mining Company, an Associated Subsidiary of United States Steel Corporation to bring its new-found mountain of ore from Cerro Bolivar down to the sea—90 miles away.

The diagram shows the proposed set-up. The Union Switch & Signal C.T.C. machine will be installed at Puerto Ordaz. V.H.F. radio will transmit the coded signals direct to the first two sidings. The same coded signals will be beamed by microwave to the tower on Cerro Bolivar, where they will be relayed to the other two sidings by V.H.F.

So, without a mile of conventional overhead line wire, the operator at Puerto Ordaz will control two-way train movements over the entire 90 miles of single-track railroad. At the same time, this microwave system will handle five telephone channels and two teletype circuits.

'Union' coded reversible track circuits will be used for the control of all wayside signal indications. 'Union' switch mechanisms and signals will be used throughout the signaling system.

## UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE

PENNSYLVANIA

NEW YORK

•

CHICAGO



ST. LOUIS

•

SAN FRANCISCO



#### QUÉBEC, NORTH SHORE AND LABRADOR

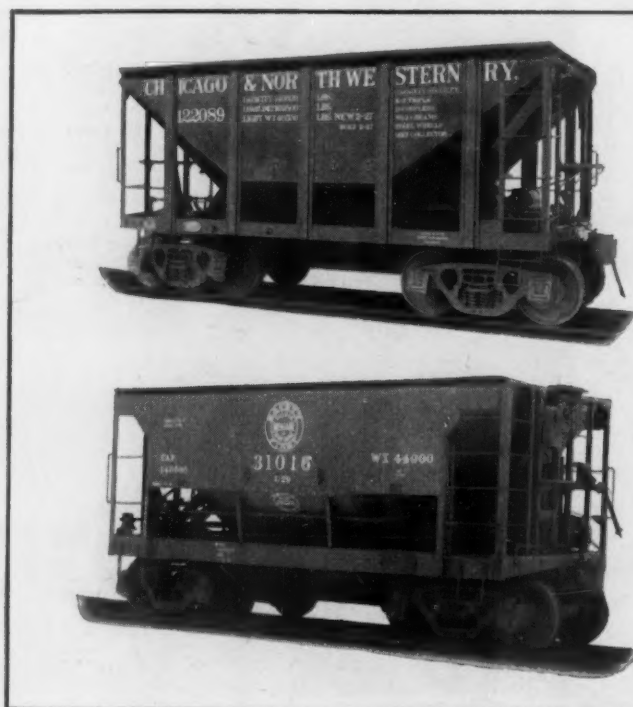
95-ton all-welded, car dumper ore car is one of 1200 being built. It was specially designed by Pullman-Standard, having a smooth interior with sloped sides and ends for fast dumping and complete clearing in car dumpers. Important savings are made by eliminating drop-door maintenance.

This car has an all-welded underframe. Specially designed corner construction, with pusher pads, provides adequate sup-

port for pushing by auxiliary narrow gauge locomotive in spotting car at the dumper.

It is equipped with type "F" tightlock coupler, clasp brakes, roller bearings and new design empty and load brakes. Because of its new design and unusual service requirements, one of the cars has been extensively tested by Pullman-Standard's Research and Development department with successful results.

At the right are illustrations of typical Pullman-Standard built ore cars. The *Chicago and North Western* cars were built in 1927 and are still going strong. 500 more cars like the one illustrated have been ordered by the *Duluth, Missabe and Iron Range* railroad. The *Santa Fe* has ordered 50 more cars like the one shown. *T.C.I.* has kept their car in continuous service for over seven years. On the *Soo Line*, cars like the one shown have been giving exceptional service for years. The *Cia Vale Do Rio Doce* car is typical of many ore cars that have gone into export service.



# what goes into an Ore Car?

—AT PULLMAN-STANDARD, IT IS YEARS OF  
ENGINEERING EXPERIENCE PLUS UNIQUE CONSTRUCTION ABILITY

Engineering and design based on nearly a century of railway freight car construction experience go into each Pullman-Standard Ore Car, to give them extra strength and longer life, to assure maximum handling economy and minimum maintenance requirements.

Ore cars have one of the toughest assignments in railroading. The nature and weight of their loads, the methods of loading and dumping, the speed and ways in which they are handled all require great structural strength and ability to take real punishment.

Pullman-Standard has produced ore cars for

every major ore carrier. Some of them have been built to the buying railroad's specifications. Some were developed by the railroad's and Pullman-Standard's engineers working together. Others like the Quebec, North Shore and Labrador cars have been designed and constructed entirely by Pullman-Standard.

Frequent checking of the cars in railroad service by sales and service engineers plus thorough testing in Pullman-Standard's Research and Development department leads to continuing improvement and elimination of trouble spots. Let a Pullman-Standard representative give you complete information.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

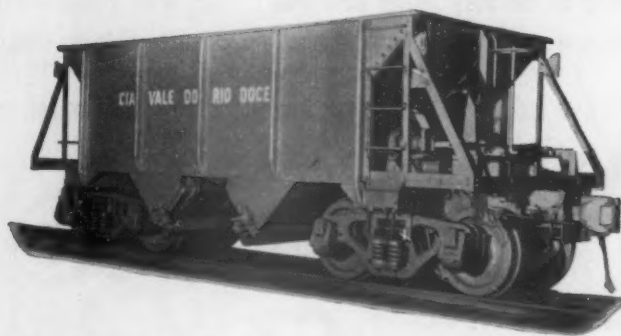
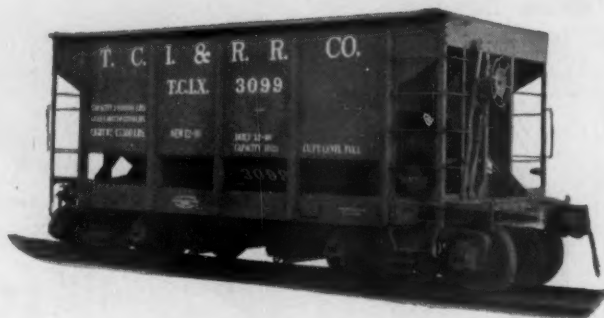
## PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON





# HOT BOXES

cause  
trouble  
too...!

## "42 Million Miles Between Hot Boxes"

In RAILWAY AGE (December 24, 1949) is a report of hot boxes on the Twin Cushion-equipped New York Central Pacemaker cars, titled as above, serving to indicate the effectiveness of Twin Cushion impact protection in reducing the incidence of hot boxes.

Never heard of a hot box "G"? Actually many hot boxes are the result of rapid changes in acceleration. As a car accelerates, due to impact, the car body tends to lift off the trucks reducing the load on the journal bearings. This permits waste to be carried up by the axle and grabbed under the bearing as the body settles back into position. Hot boxes are a natural consequence.

You can reduce these hot box "G"s by equipping cars with Waughmat Twin Cushions . . . reduce the violent changes in acceleration to minimize transfer of the shock of impact. Less shock . . . fewer hot boxes. It's that simple.

This is but one of the advantages of equipping cars with Waughmat Twin Cushions. Their chief advantage is car-structure and lading protection.

To protect cars and lading, to reduce hot boxes . . . for "G" control, specify

# WAUGHMAT

**DOUBLE-ACTING**

TRADE MARK REGISTERED

*Twin Cushions*

WAUGH EQUIPMENT COMPANY, New York • Chicago • St. Louis • Canadian Waugh Equipment Company, Montreal

\* "G", the unit of change in velocity which is equal to the pull of gravity or 32.2 feet per second per second.



A.A.R.  
APPROVED  
UNCONDITIONALLY

To File  
Tear Here



# REVENUES AND EXPENSES OF RAILWAYS

## REVENUES AND EXPENSES OF RAILWAYS

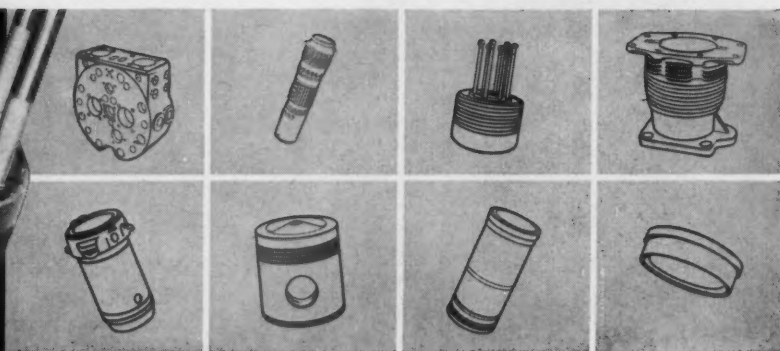
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1953

Average mileage operated during period	Name of Road	Operating Revenues				Operating Expenses				Net from railway operation	Railway tax operating accruals	Net railway operating income	
		Total (line. misc.)				Main. Equip. Deprec.							
		1953	1952	1953	1952	1953	1952	1953	1952				
171	Akron, Canton & Youngstown.....	May	171	554	551	86	447	446	815	442	810	895	368
5 mos.	May	171	554	551	86	447	446	815	442	810	895	368	
5 mos.	May	171	554	551	86	447	446	815	442	810	895	368	
13,094	Atchafalaya, Topeka & Santa Fe.....	May	13,094	41,740	41,722	8,031	2,224	669	9,595	1,714	35,025	33,310	4,664
5 mos.	May	13,094	41,740	41,722	8,031	2,224	669	9,595	1,714	35,025	33,310	4,664	
5 mos.	May	13,094	41,740	41,722	8,031	2,224	669	9,595	1,714	35,025	33,310	4,664	
13,094	Atlanta & St. Andrews Bay.....	May	13,094	213,986	213,565	3,336	3,336	45,688	45,821	8,457	172,376	172,376	26,645
5 mos.	May	13,094	213,986	213,565	3,336	3,336	45,688	45,821	8,457	172,376	172,376	26,645	
5 mos.	May	13,094	213,986	213,565	3,336	3,336	45,688	45,821	8,457	172,376	172,376	26,645	
82	Atlanta & West Point.....	May	82	1,586	1,517	29	16	109	115	21	121	102	245
5 mos.	May	82	1,586	1,517	29	16	109	115	21	121	102	245	
5 mos.	May	82	1,586	1,517	29	16	109	115	21	121	102	245	
93	Western of Alabama.....	May	93	1,437	1,388	361	59	69	56	13	321	311	11
5 mos.	May	93	1,437	1,388	361	59	69	56	13	321	311	11	
5 mos.	May	93	1,437	1,388	361	59	69	56	13	321	311	11	
133	Atlantic & Danville.....	May	133	1,587	1,466	306	47	35	31	64	172	158	14
5 mos.	May	133	1,587	1,466	306	47	35	31	64	172	158	14	
205	Atlantic Coast Line.....	May	205	853	801	841	173	75	55	24	60	257	62
5 mos.	May	205	853	801	841	173	75	55	24	60	257	62	
5 mos.	May	205	853	801	841	173	75	55	24	60	257	62	
5,379	Charleston & Western Carolina.....	May	5,379	12,191	14,908	2,404	2,600	3,476	2,866	545	11,950	11,453	7
5 mos.	May	5,379	12,191	14,908	2,404	2,600	3,476	2,866	545	11,950	11,453	7	
5 mos.	May	5,379	12,191	14,908	2,404	2,600	3,476	2,866	545	11,950	11,453	7	
343	Baltimore & Ohio.....	May	343	6,221	6,221	3,638	622	1,146	90	2,717	1,918	55,528	80
5 mos.	May	343	6,221	6,221	3,638	622	1,146	90	2,717	1,918	55,528	80	
5 mos.	May	343	6,221	6,221	3,638	622	1,146	90	2,717	1,918	55,528	80	
6,186	Staten Island Rapid Transit.....	May	6,186	167,607	167,607	423	423	8,251	7,341	1,016	892	28,671	4,204
5 mos.	May	6,186	167,607	167,607	423	423	8,251	7,341	1,016	892	28,671	4,204	
5 mos.	May	6,186	167,607	167,607	423	423	8,251	7,341	1,016	892	28,671	4,204	
29	Bangor & Aroostook.....	May	29	1,195	1,469	1,532	318	264	14	2	2	257	26
5 mos.	May	29	1,195	1,469	1,532	318	264	14	2	2	257	26	
5 mos.	May	29	1,195	1,469	1,532	318	264	14	2	2	257	26	
602	Bossmor & Lake Erie.....	May	602	6,558	6,558	164	9,977	1,500	2,220	91	24	257	89
5 mos.	May	602	6,558	6,558	164	9,977	1,500	2,220	91	24	257	89	
5 mos.	May	602	6,558	6,558	164	9,977	1,500	2,220	91	24	257	89	
213	Boston & Maine.....	May	213	3,432	3,432	2,49	2,49	2,49	2,49	2,49	2,49	2,49	2,49
5 mos.	May	213	3,432	3,432	2,49	2,49	2,49	2,49	2,49	2,49	2,49	2,49	2,49
5 mos.	May	213	3,432	3,432	2,49	2,49	2,49	2,49	2,49	2,49	2,49	2,49	2,49
1,679	Cambria & Indiana.....	May	1,679	28,752	28,752	4,515	37,430	36,729	6,502	849	171	1,125	429
5 mos.	May	1,679	28,752	28,752	4,515	37,430	36,729	6,502	849	171	1,125	429	
5 mos.	May	1,679	28,752	28,752	4,515	37,430	36,729	6,502	849	171	1,125	429	
32	Canadian Pacific Lines in Maine.....	May	32	760	760	41	492	434	117	4	8	297	43
5 mos.	May	32	760	760	41	492	434	117	4	8	297	43	
5 mos.	May	32	760	760	41	492	434	117	4	8	297	43	
234	Canadian Pacific Lines in Vermont.....	May	234	3,377	3,700	521	597	25	802	549	84	40	564
5 mos.	May	234	3,377	3,700	521	597	25	802	549	84	40	564	
5 mos.	May	234	3,377	3,700	521	597	25	802	549	84	40	564	
90	Central of Georgia.....	May	90	205	218	109	71	30	166	62	124	292	73
5 mos.	May	90	205	218	109	71	30	166	62	124	292	73	
5 mos.	May	90	205	218	109	71	30	166	62	124	292	73	
1,786	Central of New Jersey.....	May	1,786	16,463	16,463	334	334	2,955	3,036	3,333	313	313	313
5 mos.	May	1,786	16,463	16,463	334	334	2,955	3,036	3,333	313	313	313	313
5 mos.	May	1,786	16,463	16,463	334	334	2,955	3,036	3,333	313	313	313	313
617	Central Vermont.....	May	617	4,592	4,592	88	88	1,029	1,043	184	80	2,186	1,700
5 mos.	May	617	4,592	4,592	88	88	1,029	1,043	184	80	2,186	1,700	
5 mos.	May	617	4,592	4,592	88	88	1,029	1,043	184	80	2,186	1,700	
422	Chesapeake & Ohio.....	May	422	915	976	240	224	16	105	186	13	19	34
5 mos.	May	422	915	976	240	224	16	105	186	13	19	34	
5 mos.	May	422	915	976	240	224	16	105	186	13	19	34	
5,116	Chicago & Eastern Illinois.....	May	5,116	28,706	28,706	373	373	5,325	6,012	1,490	685	11,950	5,200
5 mos.	May	5,116	28,706	28,706	373	373	5,325	6,012	1,490	685	11,950	5,200	
5 mos.	May	5,116	28,706	28,706	373	373	5,325	6,012	1,490	685	11,950	5,200	
868	Chicago & Illinois Midland.....	May	868	12,267	12,267	143	143	2,613	2,186	3,678	1,700	32,233	17,600
5 mos.	May	868	12,267	12,267	143	143	2,613	2,186	3,678	1,700	32,233	17,600	
5 mos.	May	868	12,267	12,267	143	143	2,613	2,186	3,678	1,700	32,233	17,600	
130	Chicago & North Western.....	May	130	3,515	3,022	421	366	43	767	802	116	293	94
5 mos.	May	130	3,515	3,022	421	366	43	767	802	116	293	94	
5 mos.	May	130	3,515	3,022	421	366	43	767	802	116	293	94	
8,867	Chicago, Burlington & Quincy.....	May	8,867	91,686	91,686	1,916	16,509	16,509	17,162	32,233	17,600	32,233	9,704
5 mos.	May	8,867	91,686	91,686	1,916	16,509	16,509	17,162	32,233	17,600	32,233	9,704	
5 mos.	May	8,867	91,686	91,686	1,916	16,509	16,509	17,162	32,233	17,600	32,233	9,704	
1,468	Chicago Great Western.....	May	1,468	2,716	2,888	431	501	39	300	342	120	1,922	388
5 mos.	May	1,468	2,716	2,888	431	501	39	300	342	120	1,922	388	317
5 mos.	May	1,468	2,716	2,888	431	501	39	300	342	120	1,922	388	317
541	Chicago, Indianapolis & Louisville.....	May	541	1,587	1,788	1,954	335	175	1,306	1,972	548	3,318	1,382
5 mos.	May	541	1,587	1,788	1,954	335	175	1,306	1,972	548	3,318	1,382	1,382
5 mos.	May	541	1,587	1,788	1,954	335	175	1,306	1,972	548	3,318	1,382	1,382
10,670	Chic., Milw., St. Paul & Pacific.....	May	10,670	87,793	104,972	105,893	15,556	16,062	1,890	22,919	23,412	4,287	3,666
5 mos.	May	10,670	87,793	104,972	105,893	15,556	16,062	1,890	22,919	23,412	4,287	3,666	3,666
5 mos.	May	10,670	87,793	104,972	105,893	15,556	16,062	1,890	22,919	23,412	4,287	3,666	3,666
7,910	Chicago, Rock Island & Pacific.....	May	7,910	13,078	16,136	15,941	2,267	2,329	241	2,769	2,794	5,533	1,427
5 mos.	May	7,910	13,078	16,136	15,941	2,267	2,329	241	2,769	2,794	5,533	1,427	1,427
5 mos.	May	7,910	13,078	16,136	15,941	2,267	2,329	241	2,769	2,794	5,533	1,427	1,427
1,617	Chicago, St. Paul, Minn. & Omaha.....	May	1,617	2,248	2,610	2,495	524	44	432	417	90	70	195
5 mos.	May	1,617	2,248	2,610	2,495	524	44	432	417	90	70	195	195
5 mos.	May	1,617	2,248	2,610	2,495	524	44	432	417	90	70	195	195
317	Clinchfield.....	May	317	2,085	2,094	2,056	342	20	331	334	95	46	819
5 mos.	May	317	2,085	2,094	2,056	342	20	331	334	95	46	819	819
5 mos.	May	317	2,085	2,094	2,056	342	20	331	334	95	46	819	819

(Table continued on next right-hand page)





# GUN IRON

HUNT-SPILLER

## ...THE MODERN METAL for Diesel Engine Wearing Parts

Gun Iron castings, identified by the letters "HSGI", spell long, economical service for diesel engine wearing parts. Hunt-Spiller Gun Iron contains properties which provide unusual resistance to friction—extreme pressure—high heat—corrosion and erosion. These properties are recognized as vital for economical operation of diesel engine wearing parts.

The quality of Gun Iron is at all times completely controlled. It is produced in our own furnaces, cast in our modern foundry and, when desired, the castings can be completely machined in our manufacturing plant.

Look for the letters "HSGI"—Hunt-Spiller Gun Iron—for Diesel Engine Wearing Parts.

### *The Civil War*

The term Gun Iron dates to the founding of this company in 1810. During the Civil War at the South Boston Iron Works (opposite) two 11 inch caliber Dahlgren guns were cast for the revolving turret of the famous Union ship Monitor. It will be remembered that the Monitor and the Confederate ship Merrimac were the first ironclads to duel in the Civil War—changing the entire course of naval history. The South Boston works also made some 200 Rodman guns for the Union Army, more than half of which were of 15 inch caliber and weighed 25 tons apiece.



## HUNT • SPILLER

### MANUFACTURING CORPORATION

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# REVENUES AND EXPENSES OF RAILWAYS

## REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)  
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1953

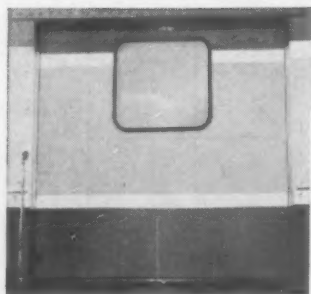
Name of Road	Average miles operated during period	Operating Revenues				Maint. Way and Structures				Operating Expenses				Not from railway operation	Railway Net railway tax operating income
		Freight	Pass.	Total	Total (inc. misc.)	Total	Total	Retire- ments	Deprec.	Total	Trans- portation	Total	Total		
Colorado & Southern	May	1,087	56	1,143	1,233	204	182	13	14	194	456	938	900	321	181
May	5 mos.	5,390	322	5,712	6,165	904	713	100	100	1,094	2,255	4,379	4,527	2,149	1,154
Ft. Worth & Denver	May	1,036	130	1,166	1,270	270	331	37	37	307	611	1,289	1,448	434	1,400
May	5 mos.	5,390	322	5,712	6,165	904	713	100	100	1,094	2,255	4,379	4,527	2,149	1,154
Colorado & Wyoming	May	1,036	618	1,654	1,833	1,452	204	204	204	1,335	3,281	6,766	7,090	2,926	1,128
May	5 mos.	5,390	3,229	8,619	9,229	5,681	1,010	1,010	1,010	5,176	10,661	21,442	22,461	8,851	4,361
Columbus & Greenville	May	154	163	317	317	136	136	10	10	146	549	886	954	615	351
May	5 mos.	729	729	1,458	1,458	582	582	44	44	626	2,736	4,422	4,718	2,736	2,577
Delaware & Hudson	May	168	841	1,009	1,009	173	176	19	19	192	236	656	686	27	26
May	5 mos.	793	4,139	4,932	4,932	767	824	139	139	906	1,045	3,448	3,789	958	164
Delaware, Lackawanna & Western	May	793	20,838	21,631	21,631	3,596	3,209	345	345	4,174	8,026	17,234	18,821	5,103	2,977
May	5 mos.	962	6,724	7,686	7,686	937	856	137	137	1,074	3,226	5,827	6,093	2,319	1,742
Denver & Rio Grande Western	May	30,183	3,931	34,114	34,114	4,177	4,020	761	761	6,387	16,063	28,976	30,343	8,822	4,387
May	5 mos.	2,313	6,658	8,971	8,971	1,340	1,205	133	133	1,573	2,121	5,072	4,821	2,178	1,151
Detroit & Mackinac	May	2,321	1,504	3,825	3,825	4,450	4,155	684	684	5,783	10,196	22,645	22,645	12,034	6,250
May	5 mos.	232	164	396	396	42	43	3	3	45	35	123	118	24	21
Detroit & Toledo Shore Line	May	781	2	783	783	209	215	14	14	223	171	578	577	350	132
May	5 mos.	50	715	765	765	81	78	4	4	85	229	401	357	350	132
Detroit, Toledo & Ironton	May	464	1,452	1,916	1,916	267	195	18	18	285	36	560	1,187	1,955	740
May	5 mos.	464	9,676	10,140	10,140	1,175	963	125	125	1,298	157	3,844	5,277	2,855	1,204
Duluth, Missabe & Iron Range	May	567	7,030	7,597	7,597	642	564	132	132	736	48	6,192	13,133	4,620	1,319
May	5 mos.	567	14,340	14,907	14,907	2,745	2,328	416	416	3,161	61	3,426	3,537	3,228	2,110
Duluth, South Shore & Atlantic	May	550	3,382	3,932	3,932	701	588	48	48	792	119	1,128	2,845	162	285
May	5 mos.	175	505	680	680	104	83	5	5	109	6	370	400	141	39
Duluth, Winnipeg & Pacific	May	175	2,205	2,380	2,380	384	377	21	21	357	28	987	2,089	171	172
May	5 mos.	175	2,205	2,380	2,380	384	377	21	21	357	28	987	2,089	171	172
Elgin, Joliet & Eastern	May	236	4,251	4,487	4,487	343	388	25	25	1,005	33	1,711	3,247	1,838	957
May	5 mos.	236	19,751	19,987	19,987	1,463	1,257	215	215	1,672	170	15,675	14,816	8,224	4,142
Erie	May	2,237	15,976	18,213	18,213	2,170	2,328	235	235	2,403	353	5,981	11,562	4,374	1,815
May	5 mos.	2,237	66,938	69,175	69,175	9,190	8,957	1,173	1,173	10,735	1,774	29,733	54,825	20,508	8,758
Florida East Coast	May	571	2,348	2,919	2,919	382	388	42	42	479	71	954	2,043	951	260
May	5 mos.	571	12,295	12,866	12,866	1,848	1,837	208	208	2,655	380	5,980	11,842	5,712	1,865
Georgia Railroad	May	321	701	1,022	1,022	108	134	9	9	136	35	327	678	151	39
May	5 mos.	321	3,572	3,893	3,893	617	611	42	42	682	173	1,650	3,278	705	187
Georgia & Florida	May	360	329	689	689	111	103	18	18	38	20	98	283	81	59
May	5 mos.	360	1,662	2,022	2,022	517	436	14	14	189	97	495	1,203	309	94
Grand Trunk Western	May	932	5,428	6,360	6,360	793	840	50	50	876	87	2,292	4,933	1,760	305
May	5 mos.	932	24,231	25,163	25,163	3,480	3,515	257	257	4,378	353	11,319	19,215	6,659	1,503
Can. Natl. Lines in N. Eng.	May	172	205	377	377	84	62	9	9	21	13	264	243	29	34
May	5 mos.	172	992	1,164	1,164	352	324	47	47	352	13	690	1,461	182	120
Great Northern	May	8,303	19,658	27,961	27,961	4,444	4,422	31	31	3,827	439	7,102	16,635	5,828	2,100
May	5 mos.	8,303	84,492	92,795	92,795	18,615	17,474	1,345	1,345	19,917	2,023	33,858	77,579	18,726	6,604
Green Bay & Western	May	224	377	601	601	101	85	4	4	52	22	92	284	98	51
May	5 mos.	224	1,814	2,038	2,038	367	341	19	19	200	106	448	1,199	645	324
Gulf, Mobile & Ohio	May	2,766	6,603	9,369	9,369	1,148	1,270	94	94	1,459	270	2,189	5,415	2,064	923
May	5 mos.	2,766	34,818	37,584	37,584	5,723	6,074	350	350	6,999	1,308	11,136	26,394	12,390	5,715
Illinois Central	May	6,538	103,573	110,111	110,111	18,756	19,424	1,886	1,886	20,947	2,535	44,649	92,156	33,972	18,630
May	5 mos.	6,538	511	7,049	7,049	1,026	1,150	25	25	183	43	427	807	264	108
Illinois Terminal	May	367	959	1,326	1,326	161	150	12	12	173	210	1,939	4,126	901	404
May	5 mos.	367	4,204	4,571	4,571	781	743	129	129	889	83	1,998	2,357	1,673	612
Kansas City Southern	May	891	3,548	4,439	4,439	481	481	33	33	463	210	1,998	2,357	9,150	4,061
May	5 mos.	891	18,431	19,322	19,322	2,344	2,210	176	176	2,715	448	5,843	11,762	7,453	3,809
Kansas, Oklahoma & Gulf	May	327	556	883	883	103	117	5	5	33	27	117	303	1,497	732
May	5 mos.	327	2,956	3,283	3,283	440	438	28	28	166	621	1,487	1,547	316	589
Lake Superior & Ishpeming	May	156	511	667	667	71	66	12	12	55	15	126	266	366	11
May	5 mos.	156	1,019	1,175	1,175	272	247	60	60	298	10	365	683	224	140
Lehigh & Hudson River	May	96	295	391	391	41	47	2	2	31	365	1,181	1,911	1,673	612
May	5 mos.	96	1,414	1,510	1,510	197	213	11	11	153	83	1,998	2,357	9,150	4,061
Lehigh & New England	May	180	939	1,119	1,119	117	89	7	7	134	276	578	902	515	208
May	5 mos.	180	2,784	2,964	2,964	424	352	31	31	617	902	2,204	2,156	368	217
Lehigh Valley	May	1,164	6,000	7,164	7,164	992	774	130	130	1,062	147	4,830	4,791	1,806	697
May	5 mos.	1,164	28,180	29,344	29,344	3,995	3,844	468	468	5,360	1,213	23,465	23,984	7,848	3,015
Long Island	May	365	1,281	1,646	1,646	659	547	73	73	885	76	11,258	19,856	865	502
May	5 mos.	365	5,975	6,340	6,340	3,221	3,075	417	417	4,446	607	20,110	20,110	2,443	2,507



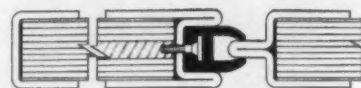
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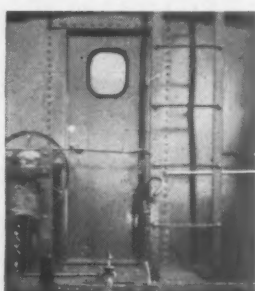
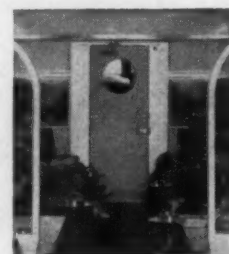


### Exclusive Split Door Seal

Drawing above shows simple Met-L-Wood Split Door Seal which assures weather- and watertightness for years of continual use. Seal also provides effective cushion when closing split doors.

## PASSENGER CAR END, VESTIBULE, INTERIOR DOORS

Sound-deadening, insulating, vibration-damping Met-L-Wood doors for passenger cars add to service life, cut deadweight... Combine modern, clean-line beauty with great strength and durability. Furnished for manual or automatic operation, with or without hardware assembly. Tapping plates for hardware are built into doors... invisible additions to strength and trouble-free service life. Sizes and types to fit all requirements... exact dimensions insure quick assembly and perfect fit. Door thicknesses from 1/2" up, as required.



## CABOOSE DOORS

Met-L-Wood caboose doors are built to last the life of the caboose—and to give trouble-free service the whole time. Weather-proof, warp-proof, rot-proof doors can be provided with or without stationary windows in all-rubber sash or with standard drop sash. Available with or without hardware. In all sizes to exactly meet specifications.

## DIESEL LOCOMOTIVE DOORS

Widely used by builders on new locomotives, Met-L-Wood doors guarantee trouble-free operation of end and interior doors on diesel road locomotives and cab doors for diesel switchers. Furnished to exact dimensions, with or without windows; either with hardware installed, or with tapping plates placed for hardware assembly on the job.



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Met-L-Wood Bulletin 520 gives the complete, illustrated story on Met-L-Wood doors for railroad uses... shows construction details, describes standard and special types and sizes. Your copy sent free upon request—write for it today.



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# REVENUES AND EXPENSES OF RAILWAYS

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(Dollar figures are stated in thousands; i.e., with last three digits omitted)  
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1953

Name of Road	Average miles operated during period	Operating Revenues				Operating Expenses				Operating Ratio				Net from railway operation		Railway Net railway tax operating income	
		Pass.	Freight	Total	Total (inc. misc.)	Total	Retire- ments	Total	Retire- ments	Total	Retire- ments	1953	1952	1953	1952	1953	1952
Louisiana & Arkansas.....	May 5 mos.	52	2,429	2,481	2,481	2,481	10	294	204	294	204	57.5	62.3	1,106	465	566	375
Louisiana & Nashville.....	May 5 mos.	295	17,574	17,869	17,869	17,869	105	1,350	1,245	1,350	1,245	57.3	61.3	5,266	2,377	2,537	1,901
Maine Central.....	May 5 mos.	5,287	86,603	91,890	91,890	91,890	2,277	10,923	8,646	10,923	8,646	71.2	79.9	5,544	3,140	2,906	1,752
Midland Valley.....	May 5 mos.	101	9,881	9,982	9,982	9,982	46	352	306	352	306	80.5	80.3	398	181	166	193
Minnesota & St. Louis.....	May 5 mos.	223	1,647	1,870	1,870	1,870	9	16	25	16	25	56.8	91.0	2,838	1,285	1,158	1,302
Minna., St. Paul & Sault Ste Marie.....	May 5 mos.	5	1,397	1,402	1,402	1,402	32	72	40	72	40	65.4	89.5	341	147	122	130
Mississippi Central.....	May 5 mos.	148	202	350	350	350	11	128	133	128	133	84.1	61.1	33	13	7	36
Missouri-Illinois.....	May 5 mos.	172	2,460	2,632	2,632	2,632	4	71	68	71	68	71.5	61.9	335	163	112	130
Missouri-Kansas-Texas Lines.....	May 5 mos.	3,242	31,460	34,702	34,702	34,702	101	1,069	972	1,069	972	72.8	72.2	1,936	811	783	647
Missouri Pacific.....	May 5 mos.	6,935	16,426	23,361	23,361	23,361	254	3,983	3,766	3,983	3,766	83.8	80.9	3,096	774	1,717	1,915
International-Great Northern.....	May 5 mos.	1,104	14,387	15,491	15,491	15,491	204	2,705	2,501	2,705	2,501	82.9	82.9	3,096	708	1,699	1,284
Gulf Coast Lines.....	May 5 mos.	1,723	3,268	4,991	4,991	4,991	43	564	535	564	535	74.9	70.6	723	118	388	456
Monongahela.....	May 5 mos.	178	730	908	908	908	11	86	86	86	86	51.7	60.9	354	32	158	70
Montour.....	May 5 mos.	51	241	292	292	292	55	359	346	359	346	63.4	63.4	1,080	161	227	279
Nashville, Chatt. & St. Louis.....	May 5 mos.	1,032	2,759	3,791	3,791	3,791	13	393	410	393	410	90.2	98.1	102	231	214	204
New York Central.....	May 5 mos.	10,716	52,006	62,722	62,722	62,722	266	2,538	2,441	2,538	2,441	69.7	72.0	5,219	2,549	2,560	2,312
Pittsburgh & Lake Erie.....	May 5 mos.	221	4,316	4,537	4,537	4,537	56	1,025	1,091	1,025	1,091	83.3	81.7	12,762	6,325	4,841	2,946
New York, Chicago & St. Louis.....	May 5 mos.	2,184	66,266	68,450	68,450	68,450	786	10,996	10,989	10,996	10,989	86.8	86.8	12,762	6,325	4,841	2,946
New York, New Haven & Hartford.....	May 5 mos.	1,770	8,251	10,021	10,021	10,021	292	1,941	2,098	1,941	2,098	80.2	80.2	2,840	1,106	792	709
New York Connecting.....	May 5 mos.	21	1,745	1,766	1,766	1,766	125	142	152	142	152	88.9	88.9	13,382	5,457	3,757	3,768
New York, Ontario & Western.....	May 5 mos.	541	2,801	3,342	3,342	3,342	90	440	413	440	413	89.3	90.3	309	177	201	191
New York, Susquehanna & Western.....	May 5 mos.	120	442	562	562	562	5	61	57	61	57	80.1	80.1	132	36	39	23
Norfolk & Western.....	May 5 mos.	2,135	14,847	16,982	16,982	16,982	285	3,381	3,006	3,381	3,006	73.3	73.3	4,553	2,317	2,111	1,851
Norfolk Southern.....	May 5 mos.	620	842	1,462	1,462	1,462	13	118	119	118	119	77.3	72.4	18,449	13,461	8,939	10,930
Northern Pacific.....	May 5 mos.	6,880	12,400	19,280	19,280	19,280	242	2,724	2,833	2,724	2,833	85.9	87.5	1,994	1,539	909	1,022
Northwestern Pacific.....	May 5 mos.	331	1,137	1,468	1,468	1,468	16	111	110	111	110	67.4	67.4	10,978	7,438	5,117	3,513
Oklahoma City-Ada-Atoka.....	May 5 mos.	132	117	215	215	215	2	20	20	20	20	54.8	40.8	1,075	346	107	152
Pennsylvania.....	May 5 mos.	10,085	70,784	80,869	80,869	80,869	1,336	36,351	32,077	36,351	32,077	86.4	86.4	18,379	7,945	8,592	5,593
Pennsylvania-Reading Seashore Lines.....	May 5 mos.	364	671	1,035	1,035	1,035	6,613	180,593	356,006	180,593	356,006	106.9	107.6	73,730	32,950	34,943	26,197
		536	3,015	3,551	3,551	3,551	51	2,664	4,464	2,664	4,464	116.3	116.3	530	1,946	1,759	1,759





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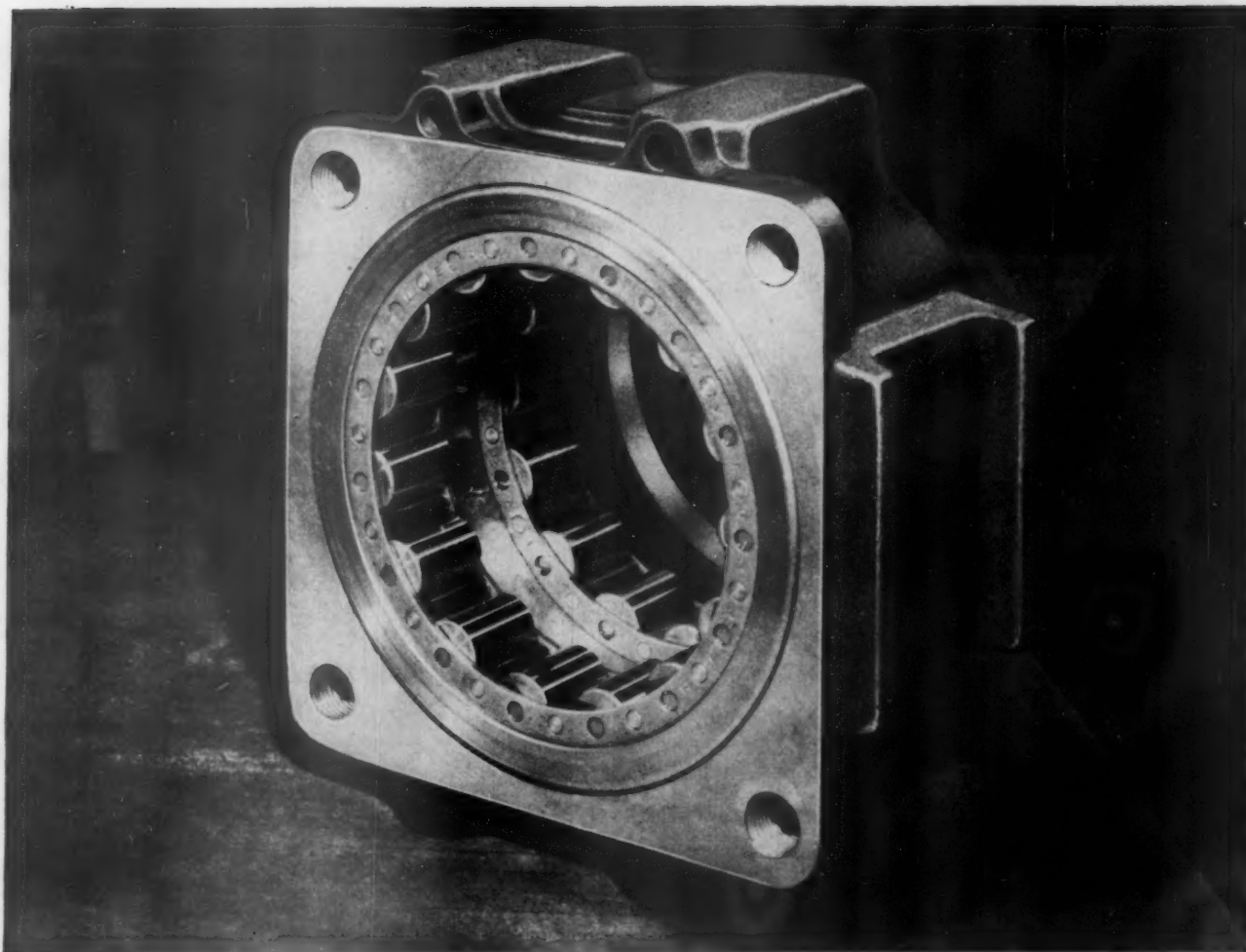
## REVENUES AND EXPENSES OF RAILWAYS

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(Dollar figures are stated in thousands; i.e., with last three digits omitted)  
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1953

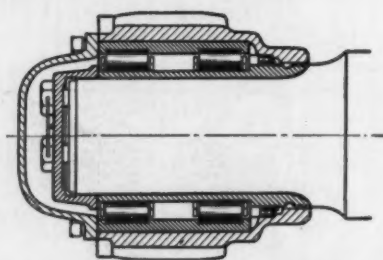
Name of Road	Average miles operated during period	Operating Revenues			Operating Expenses			Total Operating Expenses	Total Operating Revenue	Operating Ratio	Net from railway operation	Net from tax operation	Net railway income
		Freight	Pass.	Total	Freight	Pass.	Total						
		1953	1952	1953	1953	1952	1953						
Pittsburgh & Shawmut.....	May	213	176	389	46	31	77	35	47	79.2	44	5	67
Pittsburgh & Shawmut.....	5 mos.	1,078	970	2,048	227	146	373	265	140	79.2	44	5	67
Pittsburgh & West Virginia.....	May	329	272	601	51	36	87	47	85	81.9	177	25	308
Pittsburgh & West Virginia.....	5 mos.	1,332	1,093	2,425	204	131	335	176	331	81.9	177	25	308
Reading.....	May	1,310	1,071	2,381	173	147	320	257	269	67.9	998	132	164
Reading.....	5 mos.	5,421	4,521	9,942	700	577	1,277	1,283	2,838	76.2	2,779	1,365	1,583
Richmond, Fredericksburg & Potomac.....	May	1,706	1,491	3,197	436	379	815	296	421	76.4	13,197	6,313	6,939
Richmond, Fredericksburg & Potomac.....	5 mos.	7,735	6,628	14,363	1,824	1,621	3,445	1,262	1,521	61.8	881	385	332
Rutland.....	May	336	348	684	81	81	162	49	162	50.3	4,824	2,292	1,720
Rutland.....	5 mos.	1,387	1,387	2,774	393	405	798	188	798	99.3	20	20	31
Sacramento Northern.....	May	264	264	528	61	60	121	17	121	93.0	204	133	66
Sacramento Northern.....	5 mos.	1,064	1,064	2,128	272	303	575	4	575	93.0	204	133	66
St. Louis-San Francisco.....	May	4,601	4,601	9,202	1,667	1,606	3,273	115	3,388	72.4	1,217	419	677
St. Louis-San Francisco.....	5 mos.	18,628	18,628	37,256	6,667	6,419	13,086	474	13,560	72.4	1,217	419	677
St. Louis, San Francisco & Texas.....	May	159	159	318	59	59	118	38	156	75.2	2,697	1,354	1,218
St. Louis, San Francisco & Texas.....	5 mos.	638	638	1,276	236	236	472	156	628	75.2	2,697	1,354	1,218
St. Louis Southwestern Lines.....	May	1,567	1,567	3,134	1,054	1,054	2,108	516	2,624	62.2	892	417	251
St. Louis Southwestern Lines.....	5 mos.	6,268	6,268	12,536	4,216	4,216	8,432	2,064	10,496	62.2	892	417	251
Seaboard Air Line.....	May	4,080	4,080	8,160	1,491	1,491	2,982	358	3,340	57.4	13,711	7,716	4,681
Seaboard Air Line.....	5 mos.	16,320	16,320	32,640	5,964	5,964	11,928	1,432	13,360	57.4	13,711	7,716	4,681
Southern Ry.....	May	2,067	2,067	4,134	1,821	1,821	3,642	515	4,157	69.0	4,313	1,747	2,198
Southern Ry.....	5 mos.	8,268	8,268	16,536	7,284	7,284	14,568	2,060	16,628	69.0	4,313	1,747	2,198
Alabama-Great Southern.....	May	1,521	1,521	3,042	1,181	1,181	2,362	358	2,720	69.1	21,729	9,042	10,950
Alabama-Great Southern.....	5 mos.	6,084	6,084	12,168	4,724	4,724	9,448	1,432	10,880	69.1	21,729	9,042	10,950
Cinn., New Orleans & Texas Pacific.....	May	337	337	674	146	146	292	89	381	70.2	8,202	4,016	3,806
Cinn., New Orleans & Texas Pacific.....	5 mos.	1,348	1,348	2,696	584	584	1,168	356	1,524	70.2	8,202	4,016	3,806
Georgia Southern & Florida.....	May	397	397	794	173	173	346	88	434	65.4	40,163	19,732	18,104
Georgia Southern & Florida.....	5 mos.	1,588	1,588	3,176	712	712	1,424	352	1,776	65.4	40,163	19,732	18,104
New Orleans & Northeastern.....	May	203	203	406	126	126	252	25	277	72.2	545	195	331
New Orleans & Northeastern.....	5 mos.	812	812	1,624	504	504	1,008	101	1,109	72.2	545	195	331
Southern Pacific.....	May	8,113	8,113	16,226	4,600	4,600	9,200	1,114	10,314	62.9	2,658	289	1,195
Southern Pacific.....	5 mos.	32,452	32,452	64,904	18,400	18,400	36,800	4,456	41,256	62.9	2,658	289	1,195
Texas & New Orleans.....	May	4,290	4,290	8,580	1,751	1,751	3,502	89	3,591	75.7	10,834	5,365	3,745
Texas & New Orleans.....	5 mos.	17,160	17,160	34,320	7,004	7,004	14,008	356	14,364	75.7	10,834	5,365	3,745
Spokane International.....	May	152	152	304	31	31	62	41	103	70.4	19,381	8,372	8,399
Spokane International.....	5 mos.	608	608	1,216	124	124	248	165	313	70.4	19,381	8,372	8,399
Spokane, Portland & Seattle.....	May	944	944	1,888	311	311	622	114	736	62.2	530	196	83
Spokane, Portland & Seattle.....	5 mos.	3,776	3,776	7,552	1,244	1,244	2,488	456	2,944	62.2	530	196	83
Tennessee Central.....	May	286	286	572	95	95	190	69	259	71.1	887	328	492
Tennessee Central.....	5 mos.	1,144	1,144	2,288	380	380	760	276	1,036	71.1	887	328	492
Texas & Northern.....	May	161	161	322	44	44	88	21	109	68.8	1,865	256	2,220
Texas & Northern.....	5 mos.	644	644	1,288	176	176	352	84	436	68.8	1,865	256	2,220
Texas & Pacific.....	May	1,834	1,834	3,668	635	635	1,270	149	1,419	72.3	2,004	744	963
Texas & Pacific.....	5 mos.	7,336	7,336	14,672	2,540	2,540	5,080	621	5,701	72.3	2,004	744	963
Texas Mexican.....	May	161	161	322	44	44	88	21	109	68.8	1,865	256	2,220
Texas Mexican.....	5 mos.	644	644	1,288	176	176	352	84	436	68.8	1,865	256	2,220
Toledo, Peoria & Western.....	May	239	239	478	67	67	134	48	182	59.1	1,379	666	481
Toledo, Peoria & Western.....	5 mos.	956	956	1,912	268	268	536	192	728	59.1	1,379	666	481
Union Pacific.....	May	9,824	9,824	19,648	3,851	3,851	7,702	963	8,665	81.1	8,373	5,393	1,418
Union Pacific.....	5 mos.	39,296	39,296	78,592	15,404	15,404	30,808	3,851	34,659	81.1	8,373	5,393	1,418
Utah.....	May	110	110	220	21	21	42	9	51	186.4	10	—	—
Utah.....	5 mos.	444	444	888	84	84	168	36	204	186.4	10	—	—
Virginian.....	May	611	611	1,222	156	156	312	81	393	64.9	1,154	749	658
Virginian.....	5 mos.	2,444	2,444	4,888	614	614	1,228	324	1,552	64.9	1,154	749	658
Wabash.....	May	2,393	2,393	4,786	865	865	1,730	295	2,025	77.8	2,300	835	918
Wabash.....	5 mos.	9,572	9,572	19,144	3,460	3,460	6,920	1,180	8,100	77.8	2,300	835	918
Ann Arbor.....	May	294	294	588	85	85	170	30	204	74.1	12,992	5,132	4,639
Ann Arbor.....	5 mos.	1,176	1,176	2,352	340	340	680	120	800	74.1	12,992	5,132	4,639
Western Maryland.....	May	831	831	1,662	246	246	492	91	583	71.3	1,734	911	990
Western Maryland.....	5 mos.	3,324	3,324	6,648	984	984	1,968	364	2,332	71.3	1,734	911	990
Western Pacific.....	May	1,193	1,193	2,386	506	506	1,012	172	1,184	66.5	1,676	857	700
Western Pacific.....	5 mos.	4,772	4,772	9,544	1,944	1,944	3,888	728	4,616	66.5	1,676	857	700
Wisconsin Central.....	May	1,046	1,046	2,092	44	44	88	340	524	82.4	3,565	1,123	1,393
Wisconsin Central.....	5 mos.	4,184	4,184	8,368	176	176	352	1,360	4,516	82.4	3,565	1,123	1,393





## This is the Bower-Franklin journal box

This is the pedestal-type Bower-Franklin journal box which was exhibited at the Atlantic City Convention. Cartridge types are also available where required for application to existing integral-box side frames.



Roller bearings for this freight-car journal box are now coming off Bower's production line at Detroit. These bearings are of the straight roller type. The inner race fits standard AAR roller bearing axles. Two rows of straight rolls, running between the inner and outer races, are held in perfect alignment by a sturdy retainer. The single outer race completes the bearing. The bearing per-

mits free lateral movement of the axle up to  $\frac{1}{2}$  inch.

The journal boxes for the Bower-Franklin bearing are being manufactured in Baltimore by the Franklin Balmar Corporation, a wholly owned subsidiary of Franklin Railway Supply Company. Sales, service and application engineering for the complete box are being handled by Franklin Balmar Corporation. Additional information is available on request.



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 WOODBERRY, BALTIMORE 11, MARYLAND  
 CHICAGO OFFICE: 5001 North Wolcott Ave., Chicago 40

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Reflective striping, emblems, numbers give brilliant nighttime visibility to rolling stock!

LIKE MANY OTHER safety and public relations-conscious railroads, the Union Pacific reflectorizes rolling stock with "Scotchlite" Sheeting. Now at every crossing on the line, emblems... numbers... striping get full 24 hour a day visibility. Impressive by day, they're *brilliantly beautiful* at night as car headlights illuminate their true, radiant colors.

If you would like more information on railroad reflectorization programs, return the coupon below. There is no obligation, of course.

## Easy application ▶

Pre-cut numbers of "Scotchlite" Reflective Sheeting are here being permanently affixed to side of Diesel. Materials require no activating. Hinge method of application assures proper positioning.



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# Central of Georgia Boosts GTM, Cuts Costs With Help of Alco-GE Diesels

The Central of Georgia has increased GTM per train hour by 35% through dieselization, while cutting transportation costs proportionately. Husky, versatile Alco-GE 1600-hp road switchers, boasting 95.6% availability in C of G service, are playing a vital role in this story of increasing efficiency.

Alco-GE diesel-electrics are used exclusively, for example, on the heavy-drag coal haul from Chattanooga, Tenn., to Yates, Ga. Three 1600-hp units haul 77-car coal trains averaging 4200 tons over this 154-mile stretch with its 1½% ruling grade.

William E. Dillard, vice-president and general manager of the Central of Georgia, declares: "Dieselization has been the all-important factor in our profit picture. And our Alco-GE locomotives have been outstanding in their versatility and their ability to handle the toughest assignments."

The Central of Georgia became 100% dieselized in April with the delivery of 12 more Alco-GE diesels... modern motive power that symbolizes the growing strength of this fine southeastern railroad.

113-312



**AMERICAN LOCOMOTIVE**

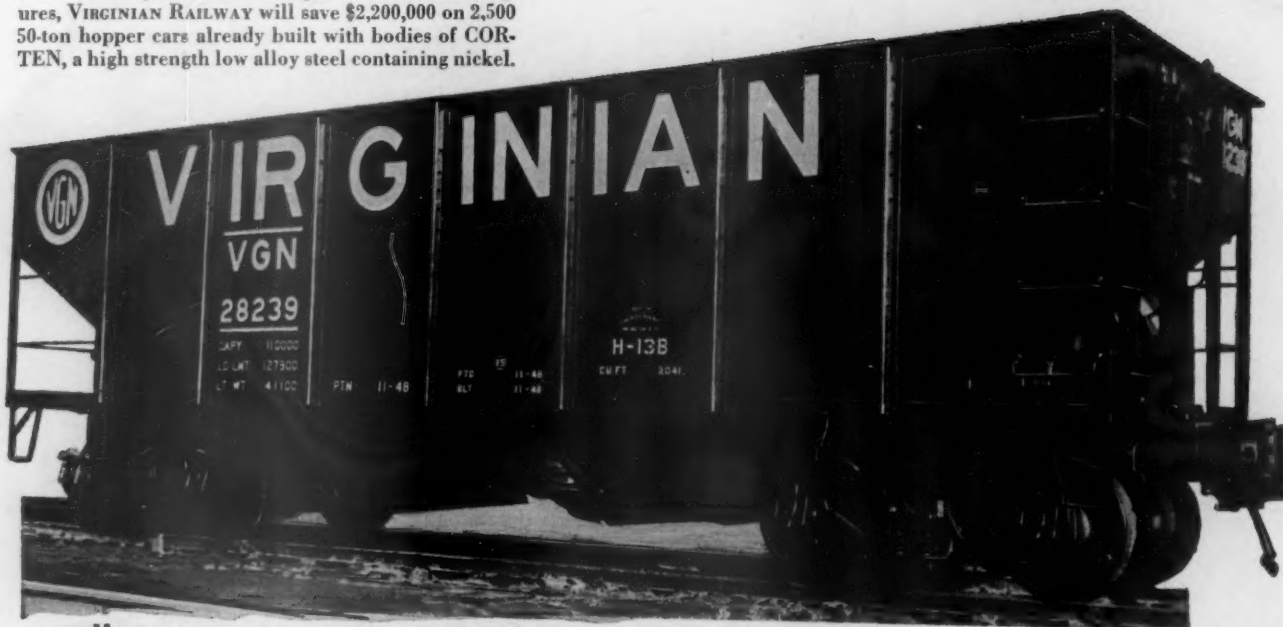
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**GENERAL ELECTRIC**





Conservatively estimated from performance record figures, VIRGINIAN RAILWAY will save \$2,200,000 on 2,500 50-ton hopper cars already built with bodies of COR-TEN, a high strength low alloy steel containing nickel.



## \$avings you can be sure of getting with high strength low alloy steels containing nickel

Follow this 50-ton hopper car . . . one of 2,500 built with bodies of U-S-S COR-TEN, a high strength low alloy steel containing nickel, produced by the United States Steel Corporation.

You'll find that steels of this type can give you a three- to six-fold return on your money by reducing corrosion damage . . .

It's a fact . . . demonstrated by actual performance tests in which body sheets of COR-TEN steel and those of copper steel have been tested side by side in identical coal hauling service for 13½ years.

On the average, COR-TEN steel sheets lost only half as much weight and thickness as the copper steel sheets.

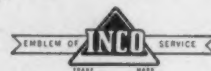
Another "identical service" test over a 13-year period confirmed the above findings. And, examinations of U-S-S COR-TEN steel hopper cars on various railroads show equivalent sub-

stantial reduction of corrosion damage.

Produced under various trade names by leading steel companies, these high strength steels containing nickel along with other alloying elements, provide three basic advantages:

1. Good resistance to corrosion, abrasion and impact.
2. High strength in the as-rolled condition, permitting important weight reductions or improved factors of safety.
3. Excellent response to usual fabrication operations, including easy forming and welding.

At the present time, nickel is available for end uses in defense and defense-supporting industries. The remainder of the supply is available for some civilian applications and governmental stockpiling.



**THE INTERNATIONAL NICKEL COMPANY, INC.** 67 WALL STREET  
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Experience from such cooperative research efforts—plus exhaustive field evaluations—has produced Diesel lubricating oils that keep engines clean—keep costs down... oils which are proving eminently successful on many major roads today.

Why not use our experience—and proved products—to improve *your* operations?

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# Reduce Expenses



## by Eliminating Sidings with G-R-S Centralized Traffic Control

Track and roadway maintenance averages \$2,317 per track-mile, for 78 railroads, according to the A.A.R. Signal Section.

Installations of G-R-S Centralized Traffic Control often result in track retirement. One railroad eliminated 10 sidings in 82 miles; another, 16 sidings in 136 miles.

The savings in operating expense can be considerable. Moreover, salvaging track materials may pay a large portion of the first cost of cTc.

Act now to reduce your expenses with cTc. Call your G-R-S district office for studies and estimates.



### GENERAL RAILWAY SIGNAL COMPANY

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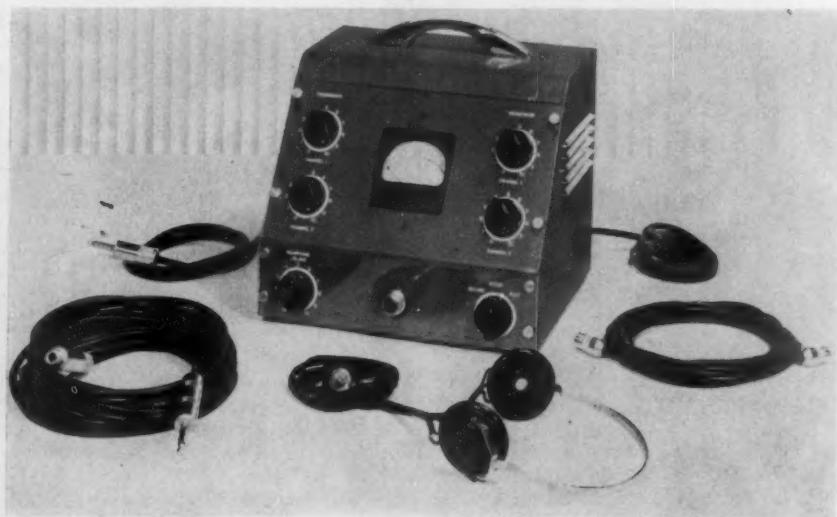
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Main Office  
ROCHESTER 2, N. Y.

611 Olive St.  
ST. LOUIS 1 A-2563



# What's New in Products



## Film Sound Track Mixer and Control Unit

An electronic mixer and volume control unit for use with Bell & Howell Filmosound 202 16-mm. magnetic projector provides a simple but accurate means of mixing sound signals, that are to be placed on a film sound track, from microphones, phonographs and tape recorders.

This type of equipment, which permits proper blending of music, voice and sound effects, has been limited largely to professional studios.

Self-contained and operating from any 115-volt, 50-60-cycle power supply, the unit provides for two microphone and two phonograph input channels, each independently operated. A single cable connects the unit to the recording projector. An illuminated volume meter is calibrated in volume units. A set of matching headphones and two 25-ft. extension cables are included as standard equipment. Listed at \$140, the unit is available from authorized Bell & Howell dealers. Information may be obtained from the Bell & Howell Co., 7100 McCormick road, Chicago •



## Catalyst Captures Battery Gases

A development in railroad storage battery maintenance, consisting of a catalytic device which preserves water in batteries, prevents corrosion, and warns of impending battery failure, is now made for automotive storage bat-

teries and will soon be made available for diesel-electric locomotive and passenger car batteries by Industrial Research, Inc., Miami, Fla. A palladium catalyst is constructed into a special battery cap called a Hydrocap which converts a battery's escaping hydrogen

and oxygen gases back into water. The cap being manufactured is designed for the standard railroad monoblock batteries in use for railway car lighting and air conditioning and for diesel-electric locomotives. The Hydrocap, which is in effect a miniature chemical plant, replaces the conventional caps on the railroad battery's cells. The manufacturer states it will return 95 per cent of the battery's escaping water.

In addition to keeping water in the battery at a safe level longer than has been possible before, the caps prevent corrosion by capturing the corrosive sulphuric acid fumes which commonly escape and return them as water back into the battery. This tends to retain proper specific gravity and protects battery cables, holders, wiring, electrical terminals, etc., from corrosion.

Hydrocaps normally operate warm to the touch. A dead cell will make the Hydrocap remain cold while added burden is thrown on the other cells, which will then also give warning by being unusually hot. Too high a rate of charge which might be caused by an improperly set regulator will cause all caps to be abnormally warm •

## High-Capacity Storage Batteries

Twenty per cent more capacity in the same space is claimed for the new line of T-H (Thrifty Hauler) Exide Ironclad batteries just announced by the Electric Storage Battery Company, Philadelphia, Pa.

The battery incorporates new materials and structural changes to give increased capacity. In many materials handling and haulage jobs, this increased capacity is needed to work through a full shift.

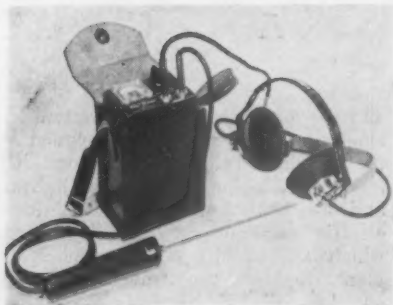
Polyethylene non-oxidizing slotted plastic tubes are used to keep the active material in constant contact with the grid spines and still permit free electrolyte penetration throughout the active material.

An added feature is a polyethylene acid-proof tube-sealer fitted to the bottom of the positive plate, which seals in the active material and maintains battery capacity for a longer working life. Grids contain corrosion-resistant Silvium, which the manufacturer states also contributes toward longer battery life.

Positive plates in this T-H battery are larger than standard, and are balanced by extra heavy negative plates. Pormax separators, a new homogenized sealing compound, and seamless rubber jars are other features.

Steel trays are sprayed with a plastic coating which is acid-resistant and possesses good insulating qualities. Quarter-turn unbreakable plastic vent plugs facilitate quick and easy flushing •

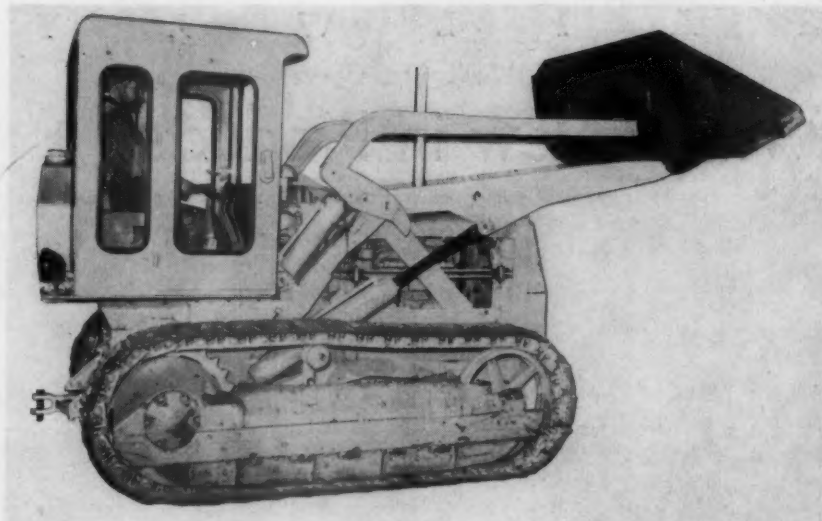




### Noise Detector Sees and Hears

The Anco Instrument Division, 4254 West Arthington street, Chicago, has introduced a new audio-video model of the Elec-Detec, portable electronic instrument designed for locating, amplifying and measuring noise sources in all types of mechanical equipment. The unit, known as Model V, includes a milliammeter for checking sound impulses visually, in addition to standard headphones for audible operation. The combination, it is stated, enables the operator to "see as well as hear" the location of the source of trouble.

Accurate performance of the new video unit, it is claimed, is assured by use of a highly stable germanium crystal diode in the circuit. This crystal serves to rectify the current to record the electrical impulses accurately on the d.c. milliammeter, and to provide the wide frequency response required •



### Heavy-Duty Cabs for Caterpillar "Traxcavator"

Production of heavy duty cabs for installation on the Caterpillar model HT4 "Traxcavator" tractor has been announced by Crenlo, Inc., Rochester, Minn. The cab is specially designed for crawler-type tractor service, and features a 12-gage arc welded all-steel body reinforced by 3/16-in. structural members. Heavy-duty hinges and latches and a 3/16-in. safety glass mounted in self-sealing weather-strip

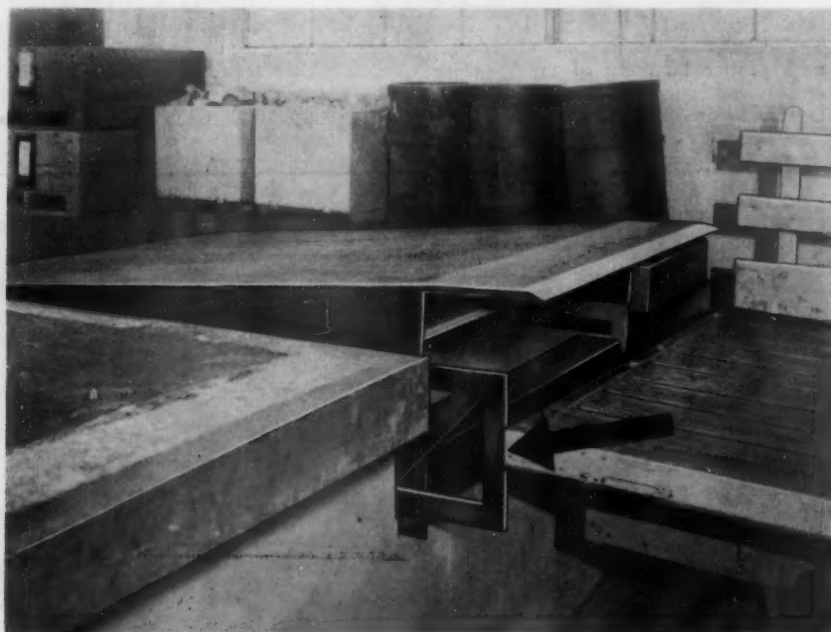
are standard equipment. A removable canvas curtain extends from the bottom of the windshield to the dash and floor plate. Doors may be fastened in open position.

The manufacturer states that the cab is easy to mount—being bolted directly to the tractor fender without the need for breaking any hydraulic lines. Access to controls is said to be convenient. Engineering of the cab structure, it is claimed, permits the operator to use all normal types of allied equipment without modification •



### Heavy-Duty Rectifier Welder

Metal & Thermit Corp., 100 East 42nd street, New York 17, has announced the availability of a new d.c. rectifier welder in 200-, 300- and 400-amp. ratings. This machine is a heavy-duty unit built for day in and day out service in production welding. Its design incorporates fan-forced, up-draft ventilation which provides low operating temperatures and assures long rectifier life •



### Self-Adjusting Dockboard

A "Hi-Lo Dockboard" which adjusts itself to varying truck bed heights without power is being introduced by Dockboards, Inc., Milwaukee 11, Wis.

The board is operated by an extended lever which is pressed by the truck as it backs in. The maker claims this simple design eliminates the need

for hydraulic or electric raising and lowering mechanisms, thereby reducing cost of installing and maintaining the board.

Several models are available, including units, for installation in new or rebuilt docks; also a new packaged unit built to specific dock heights and shipped "ready to operate" after hanging the counter weight •



# Edgewater **rolled steel** Wheels

**precision-made by modern methods**

To fully meet exacting AAR standards, Edgewater has developed many precision practices for the manufacture of rolled steel wheels for freight cars, passenger cars and Diesel locomotives.

The steel is made in Edgewater's Open Hearth Furnaces, employing the most advanced metallurgical practice. Ingots are bottom-poured, "control" cooled, and "sliced" into blocks. From these blocks, wheel blanks are forged and rolled to shape on rolling mills that produce in the metal a firm homogeneous grain structure. Final machining on modern precision wheel lathes completes the wheel.



During the manufacture of Edgewater Rolled Steel Wheels, frequent checking is employed to insure high quality. Final inspection before shipment makes certain of complete conformity with AAR specifications.



## **Edgewater Steel Company**

PITTSBURGH, PENNA.

MAKERS OF ROLLED STEEL TIRES, WHEELS and DRAFT GEARS





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## ESSO RUST-BANS

Used extensively on overhauled and rebuilt railroad diesel engines and spare parts... Esso Rust-Bans provide a dependable protective coating that helps prevent rust and corrosion. Esso Rust-Bans are available in several types for protection of both precision engine parts and heavy machinery which must be stored outside.

"RUST-BAN is a registered trade-mark"

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# Lewis sealtite large head car bolts



Especially designed for tank car running boards, but may be used in wood wherever larger heads are required. Sealtite fins prevent turning. Beveled head provides water-tight seal, prevents tearing of wood fibers. Available in Hot-Dip Galvanized finish for Double-Life, greater economy.

Cross section of head, from above, showing fins, bevel and shank. Bolt available with Loktite Nut (#2 or std. sq. nuts).

See your Lewis representative, or contact factory for samples, prices, full details.

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## Benchmarks and Yardsticks

A RECENT POPULAR scientific book—telling how modern chemistry is on the threshold of being able to provide physical abundance for all the earth's inhabitants—was recently reviewed in the Freeman magazine. The reviewer ended his friendly appraisal with the following arresting sentence:

"The road to abundance is finally a political problem, vastly more difficult to solve even than the mystery of photosynthesis."

Earlier in his essay the reviewer observed that, probably, most food chemists today are spending their time on some other problem than that of "releasing abundance"; and that most of our resources, including the mental, are now being wasted on "silliness."

The reviewer's warning is certainly appropriate and timely. Our technicians are full of "know-how" but much less informed, or concerned about, "know-why." The technicians are lavishly praised, and justly, for their effectiveness in revolutionary discoveries, vastly increasing man's command over all aspects of nature—except human nature, which is the most important aspect of all.

Progress can be made in the sciences of human relations (politics, economics, psychology and so on) in exactly the same way that progress has been made in the physical sciences—namely, by starting on a firm foundation of observable fact, however tiny to begin with, and building steadily and honestly upon that foundation. If the physical scientists of a hundred or more years ago had spent all their time, either in wringing their hands over their ignorance or in boasting of a depth of knowledge they had not yet attained (as so many of their modern contemporaries in the fields of morals and the social sciences do today), our technological progress could not have occurred.

It took a background of political freedom to give physical science and engineering the opportunity to win their victories of the past century. Disregarding this obvious fact, many of our social scientists today insist that further progress lies, not in extending freedom but in ending it. At the same time, many beneficiaries of such political freedom as remains are using that freedom to propagate, not the truth, but falsehood. The principles that "honesty is the best policy" and that personal conduct must be charitable are just as demonstrable and significant scientific facts as the equality of 4 with 2 plus 2.

A prosperous society cannot be sustained upon bare-faced selfishness, aided by malice and misrepresentation on the part of leaders in business, labor, politics or religion—any more than it can be supported by engineers who don't know, or who try to by-pass, the multiplication table. J.G.L.



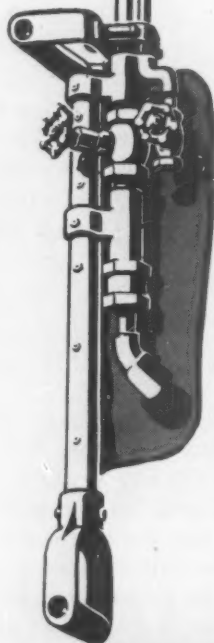


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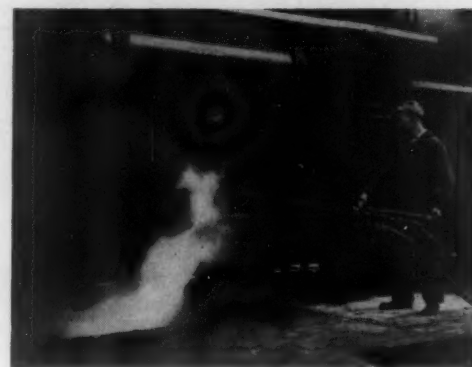


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# **OAKITE**

## **RAILWAY DIVISION**

## Sound Transport Principles And the Postal Service

Your reporter recently had occasion to discuss with other publishers the project of the Post Office department to put into effect a further substantial increase in second-class postal rates (the rates charged for distribution of most paid-circulation periodicals and newspapers). Most of these publishers, to the extent that they revealed their individual views, appeared to believe that further increases in their rates should await adoption by the government of a more consistent policy for operation of the Post Office department.

### **"Red Ink" Branches in Post Office, Too**

As now operated, the Post Office department incurs an annual "deficit" of about half a billion dollars—similar in amount to the equally controversial "deficit" incurred by the railroads in the operation of passenger service. However, a substantial part of this Post Office "deficit" is not suffered from its business operations, but in providing unremunerative services which are required by law. For example, a part of the deficit is incurred from the air-mail subsidy. Another part comes from the free distribution of mail for other departments of government. Still another part of the "deficit" comes from the provision of mail service to out-of-the-way rural areas and islands, where revenues are far less than operating costs (i.e., these are the Post Office's "red-ink branch lines"). Then, finally, there is the provision in the law for the distribution of weekly newspapers free of charge within the county where they are published.

If the Post Office is to be looked upon primarily as a business institution, expected to pay its own way, then it should get credit for the services it provides for non-business reasons. That is to say, if the Post Office is to be required to pay more for the handling of air mail and R.F.D. than the revenues from such mail, then the "red ink" from such services ought to be a charge upon the taxpayers as a whole, and not against other users of the postal service.

There appears to be some disposition in the Post Office department to avail itself of forms of transportation other than the railroads, wherever these are available on a contractual basis at a price

less than standard railway charges. Should such a course become a settled policy in the Post Office, then it would join the large number of "pick and choose" customers the railroads already have—who do not seem to appreciate that standard charges are established on the basis of including the "cream," and cannot be successfully applied in the long run only to the "skim milk."

The parallelism between the situation of the Post Office and that of the railroads is sufficiently close so that both institutions should have a deep appreciation of each other's problems. Both have the problem of "red-ink services." Both have "pick and choose" patrons. Both have a "time lag" problem.

### **Principle vs. Expediency**

The easiest course for everyone to follow in dealing with either the Post Office or the railroads is that of selfish expediency—what's the practice that will be cheapest for me, here and now? In the long run, however, persistent red ink inevitably means deterioration in service; and poor service by either the railroads or the Post Office will be much more costly to patrons than adherence to principles in providing service and in fixing rates that will enable these institutions to prosper.

When a speaker propounds principles which appear to do no more than serve his own selfish purposes, his oratory seldom carries much weight. When, however, he proves his point by citing his examples from another business or institution than his own, he proves beyond cavil his devotion to principle. This paper strongly suspects that the Post Office department could gain recruits—as seems to be its desire—in support of the application of business principles in the management of that department, in no other way quite as effectively as by dealing with the railroads exactly as the Post Office department itself would like to be dealt with by Congress.

Conversely, railroad men, when discussing sound transportation principles, could illustrate what they have in mind by instances from the Post Office. Both the Post Office and the railroads would benefit equally by wider public understanding and support of these principles. The patrons of both the railroads and the Post Office would benefit if neither of these services were required to absorb the cost of "red-ink" operations; and if both were permitted, under generally acceptable accounting, to charge adequate rates on the unquestionably commercial part of their business.

The Post Office is, in some of its functions,



inevitably in competition with other forms of transportation. It is unfair to these competitors, as well as ruinous to the Post Office department itself, for the Post Office to be required to maintain such services (e.g., parcel post) at less than actual cost. Where private competition is not involved (e.g., as with first-class mail and second-class matter), it is proper for joint costs (but not out-of-pocket costs, of course) to be allocated in terms of public policy. That is, there is no violation of principle involved if Congress should decide that the bulk of joint costs should be allocated to the Post Office's principal function—the distribution of first-class mail—and that printed matter which meets the required standards of wide public usefulness and demand should be priced as a by-product.

As always, chaos is the result when an attempt is made to solve a knotty problem in economics by a show of hands which represent nothing more exalted or intelligent than the immediate selfish interest of those who are doing the voting. There has been too much of this kind of dealing, both with transportation as a whole and also with the Post Office department as a government owned transportation agency.

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## Air Freight Principles Applied to Rail Service

John C. Emery, a successful air-freight operator who used to be on this paper's editorial team—and who thereafter was on the staff of Coordinator Joseph Eastman and of the Railway Express Agency—has an article in the current issue of the Harvard Business Review which should make provocative reading for any railroad officer. Mr. Emery founded a rapidly growing transportation business by applying what he termed (in an interview in the November 10, 1952, *Railway Age*) "the fundamental principles," chief of which he gives as "predictability" or "dependability." Speed, of course, is also a factor and this, he explains, he has endeavored to provide by "speed on the ground to match speed in the air"—having observed that, ordinarily, "like railroad freight, air traffic spends more time sitting in terminals than it does traveling from place to place."

One railroad has recently started to provide increased speed for perishable traffic, at premium rates—which would seem to conform to Mr. Emery's observation that business in this country has developed as it has by "giving more significance

to value than to cost." He divides the development of a new transportation business into two phases—the "take-away" and the "creative." In the first phase, the new service "takes away" from existing transportation most of the business it gets. In the second, or "creative" phase, the transportation service begins to substitute transportation for some other service or process. For example, a "prospect" may be shown that, by using air freight or express, he can afford to pay a fancy price per ton-mile for transportation, when he saves thereby a much greater sum in warehouse and inventory expense.

We are not calling attention to Mr. Emery's writings because of personal friendship for him—and still less for the purpose of helping him to filch away any more business than he may have done already from the railroads or the Express Agency. Instead, our purpose is to call attention to the usefulness to the railroads of the idea he propounds. This idea is essentially simple and there is no copyright on it. It is as applicable to the railroad business as it is to air freight. That idea is to *study the needs of the customer and gear your service to his needs*. Give him that quality of service which will meet the needs of his situation and make the service reliable, and you will get his business—and he won't kick if you make a profit from your end of it.

Such an approach to the customers, actual and potential, of railroad freight service should be just as "creative" of new traffic and higher earnings on the railroads as it is for air freight. The railroads do some of this "creative" selling. The question is: Do they do as much of it as it would be profitable for them to do?

There was a visitor in our shop not long since who told of the recovery of a considerable volume of freight by a railroad from truck competition—not by rate concessions, but simply by policing the service so the shipper could depend upon its regularity, and by providing equipment suited to the lading, thereby reducing intra-plant handling costs. The recapture of this traffic cost the railroad nothing in reduced rates and very little in the way of added operating expense. The only outlay was that of brains and imagination on the part of a few traffic and operating men. A similar outlay would doubtless be equally productive in many other situations.

To a railroad, transportation is a terminal-to-terminal service that costs so much and brings in so much revenue. To the purchaser of transportation, there may be aspects of intra-plant operation that make the cost of the terminal-to-terminal movement of relatively minor consequence, provided these intra-plant requirements are appropriately considered. Original thinking can be as profitable to an old-line transportation agency as to a new one.



SANTA FE WESTBOUND departure yard where journal boxes are serviced at Argentine, Kan.

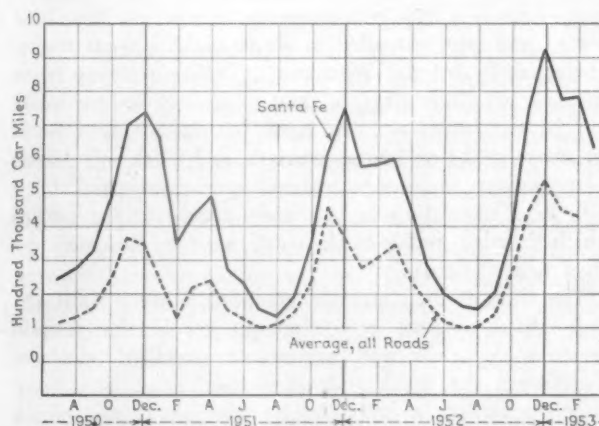
## How Santa Fe Reduces Hot Boxes

Special attention to through symbol freight trains tripled the miles per hot box and raised the system average to 917,875 car-miles per set out

Like most other railroads, the Santa Fe has been working for years to reduce train delays caused by overheated journals. When the figures for August 1951 were compiled, showing a total of 2,514 hot boxes, of which 1,295 required stopping freight trains to set out cars between terminals, it was realized that something more effective must be done. President F. G. Gurley became personally interested, and with the backing of his office a plan of action was evolved in which the operating and mechanical departments cooperated to triple the number of car-miles per hot box on through symbol trains to and from the Pacific coast. This raised the system average to 917,875 miles per car set out, as reported to the A.A.R. for December 1952. This is 73 per cent higher than the average of all other roads included in the Association of American Railroads hot box report.

### Economy Obvious

The economy in reducing excessive hot box delays to freight trains in transit, even at the expense of some additional work and possible slight delay in leaving terminals, cannot be questioned. Recognizing this fact, the Santa Fe inaugurated a program of improved servicing of journal boxes in yards which included opening lids and initial inspection for signs of overheating on arrival of trains at inbound yards; pit inspection and free oiling as cars pass over the hump; special servicing of journal boxes as required; and application of spring packing retainers to foreign as well as system cars while in outbound yards after trains are made up. This avoids packing disturbance by switching prior to

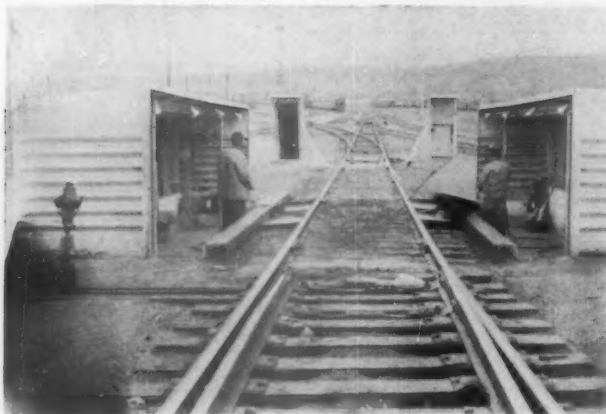


FREIGHT-CAR MILES per hot box set out between terminals as reported to the A.A.R.

train departure and practically assures trouble-free symbol train operation through to destination with no other work except the addition of oil and examination of boxes at one intermediate point, Belen, N. M., instead of three as formerly required.

Initial tests were made on two through symbol trains operating westbound from Kansas City to California. Beginning in September 1951, all boxes were serviced and packing retainer devices applied as described at Argentine yard. The retainers were removed insofar as possible from foreign cars not previously equipped prior to delivery of these cars off line. Results of the early test runs proved of so much benefit in reducing car set outs for hot boxes that the program was extended in





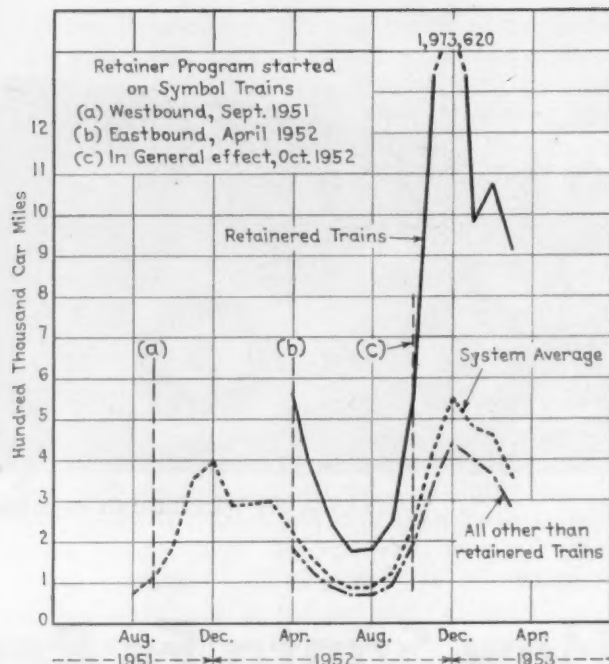
INSPECTION PIT and oiling station at Argentine.

April 1952 to all through-service trains, both east- and west-bound. These trains originate at Chicago and Kansas City for California points and at San Bernardino and Bakersfield, Cal., for eastbound movement to Kansas City and Chicago. The improved journal-box servicing and retainer application program was well under way and generally effective on Santa Fe symbol freight trains by October 1952.

#### Operations at Argentine

The attention now being given to journal boxes on the Santa Fe is exemplified by operations at the Argentine (Kansas City) yards where this work was first started and later extended to six to eight 100-car trains leaving daily for the West coast. Trains arriving from the East are "blue-flagged" and gone over in the usual way by car inspectors who open journal-box lids, hook for waste grabs or scored journals and mark any boxes warm enough to seem to warrant special attention. Cars with mechanical defects in wheels, trucks or car bodies which involve repair-track work are so indicated by "bad order" cards.

The train is then humped at about 4 m.p.h. past the well-lighted modern inspection pit set in the ground between the rails and giving an excellent view of underneath car, truck and wheel conditions. Any dragging equipment is immediately detected at this point. Other typical defects found include broken spring



FREIGHT-CAR MILES per hot box on the Santa Fe.

planks, broken wheel rims, seamy treads, chipped flanges, missing draft lugs, and broken floor stringers and decking.

Close to the inspection pit and about 300 ft. short of the hump is the car inspectors' oiling station, which consists of an openside shed 4 ft. wide by 16 ft. long on each side of the track, provided with radiant heat in the concrete floor and equipment to supply about 4 ounces of heated car oil per box as the cars pass by. Two car oilers are used at this oiling station, one on each side of the track.

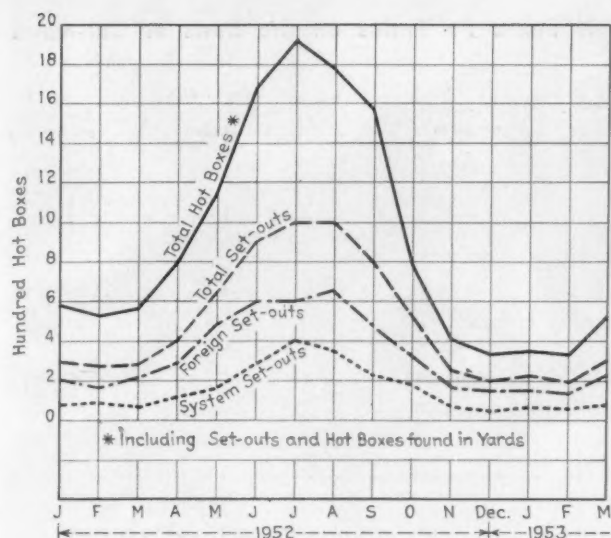
#### Special Servicing Work

The train is humped into the classification yard and subsequently pulled out into the departure yard, generally in cuts of 25 to 60 cars each, and here is where the special journal-box servicing work is done. The operating department moves these outgoing cuts of cars and all fills into the departure yard and turns them

TABLE 1—Santa Fe System Freight Car-Miles per Hot Box in 1952 and the First Quarter of 1953

	Total system car-miles	Set outs on road	Hot boxes found in yards	Total	Average miles per hot box	Average miles per hot box set out*
1952						
January	163,435,000	286	276	562	291,000	571,521
February	153,956,000	265	264	529	291,000	580,964
March	165,087,000	276	278	554	298,000	598,140
April	176,933,000	397	395	792	223,000	445,676
May	179,876,000	638	495	1,133	159,000	281,938
June	178,457,000	883	787	1,670	107,000	202,103
July	166,616,000	1,000	914	1,914	87,000	166,616
August	153,891,000	999	772	1,771	87,000	154,045
September	163,533,000	793	767	1,560	120,000	206,221
October	188,408,000	505	296	803	235,000	373,085
November	177,050,000	245	170	415	427,000	722,655
December	180,821,000	197	134	331	546,000	917,875
Total	2,048,083,000	6,484	5,550	12,034	170,191	315,867
1953						
January	172,195,607	223	136	359	480,000	772,178
February	155,174,587	197	139	336	462,000	787,688
March	186,021,741	298	224	524	355,000	624,234

\* As reported to the A.A.R.



**HOT BOXES in Santa Fe freight service.**

over to the mechanical department as far in advance of train departure time as possible. Blue flags are applied at each end of the individual cuts and four car men start, one on each side at each end of the cut, working toward the middle. The packing in all boxes is set up and retainer springs applied in all boxes not equipped. Journals are hooked again to make sure that coupling shocks in the yard have not caused packing to work under any brasses. Journal-box lids are closed, the brake pipe is charged and brake tests are made.

### Efficient Handling

About 14,000 spring packing retainers of seven different sizes (five long and two short) and three different makes are applied each week at Argentine yard and 2,200 removed, about 75 per cent of the latter being reclaimable for further use. To assist in handling this large number of retainers, eight material racks are strategically located at various points in the yard, both retainers and brake shoes being distributed in advance alongside three tracks on which cuts of cars are set in the departure yard.

Eight men are used on one shift for this special journal-box attention and six on the second-shift, two



**APPLYING a spring packing retainer to a journal box.**

men being employed part time at the repair track and part at the reclamation position where all retainers removed from journal boxes of foreign cars are assembled, straightened and reworked with templates so as to be usable again. Almost one-half of the new retainers used are applied on the repair track before cars are switched to the departure yard.

### Little Time Consumed

The time required to give this type of journal-box attention and apply spring packing retainers as needed averages six man-minutes per car in the departure yard. It thus takes about 90 minutes to service a cut of 60 cars with two men working on each side.

It was originally believed that this work might set back train departure time as much as 45 minutes, which was considered a small penalty to pay in preventing hot boxes often causing several hours delay to freight trains on the road. As a matter of fact, the cooperation of yard forces in getting relatively small cuts of cars to the mechanical department at frequent intervals avoided peak demands on car forces and permitted organizing the work on a much more orderly, efficient and time-saving basis than would otherwise have been possible. As now handled, Santa Fe symbol freight trains are seldom delayed in leaving departure yards because of specialized attention to the journal boxes.

No overall figures on increased labor cost of this

**TABLE 2—Comparison of System and Foreign Freight Cars from a Hot-Box Standpoint**

	System car-miles	Foreign car-miles	System set outs	Foreign set outs	Miles per system set out	Miles per foreign set out
<b>1952</b>						
January	98,236,444	65,218,538	78	208	1,259,442	313,551
February	92,173,202	61,782,371	93	172	991,110	359,200
March	97,236,047	67,850,620	72	204	1,350,501	332,601
April	105,098,444	71,834,963	113	284	930,075	252,940
May	110,084,401	69,792,072	165	473	667,178	147,552
June	110,108,192	68,346,170	291	592	378,379	115,455
July	103,551,760	63,064,105	410	590	252,565	106,888
August	94,596,980	59,294,316	333	646	267,980	91,787
September	93,753,666	69,779,677	315	478	297,631	145,983
October	100,233,057	88,174,945	183	322	547,722	273,835
November	94,367,865	82,682,539	75	170	1,258,238	486,368
December	104,153,103	76,668,256	52	145	2,002,944	528,747
<b>Total</b>	<b>1,203,593,161</b>	<b>844,491,572</b>	<b>2,200</b>	<b>4,284</b>	<b>547,087</b>	<b>197,126</b>
<b>1953</b>						
January	105,383,711	66,811,896	67	156	1,572,891	428,281
February	94,656,498	60,518,089	55	142	1,721,027	426,184
March	110,124,872	75,896,871	72	226	1,529,512	335,827



**TABLE 3—Relative Performance of Symbol and Other Santa Fe Trains on the Basis of Car-Miles Per Hot Box**

1952	Total car-miles	Retainered Trains		Total car-miles	All Other Trains	
		Total hot boxes	Car-miles per hot box		Total hot boxes	Car-miles per hot box
(Retainer program initiated on symbol trains eastbound)						
April	42,434,930	76	558,355	134,498,477	716	187,840
May	50,384,899	131	384,617	129,491,574	1,002	129,233
June	51,976,827	225	231,008	126,480,535	1,445	87,530
July	37,785,102	219	172,535	128,830,763	1,695	76,009
August	36,612,336	206	177,730	117,278,960	1,565	75,130
September	51,312,557	213	240,904	112,220,786	1,147	90,864
(Retainer program in general effect on symbol trains)						
October	54,345,842	104	522,556	134,062,160	699	191,791
November	49,749,282	37	1,344,575	127,301,122	378	337,040
December	47,366,883	24	1,973,620	133,454,476	307	434,705
1953						
January	47,913,687	49	977,830	124,281,920	310	400,909
February	49,110,574	45	1,081,346	106,064,013	291	364,481
March	56,222,414	62	906,813	129,799,329	462	280,951

improved journal-box servicing program on the Santa Fe are available, but it is generally conceded to be far less than the saving in operating and maintenance costs attributable to fewer hot boxes. To be considered in addition is the better service to shippers and increased railway prestige. Further on the credit side of this ledger must be shown the saving in labor at two additional intermediate points where journal boxes formerly were oiled and examined. This labor saving offsets to some extent the increased cost at major terminals where more car men are employed to inspect and service the journal boxes of symbol trains, both inbound and outbound, and to install and remove spring packing retainers.

#### Cost of Installation

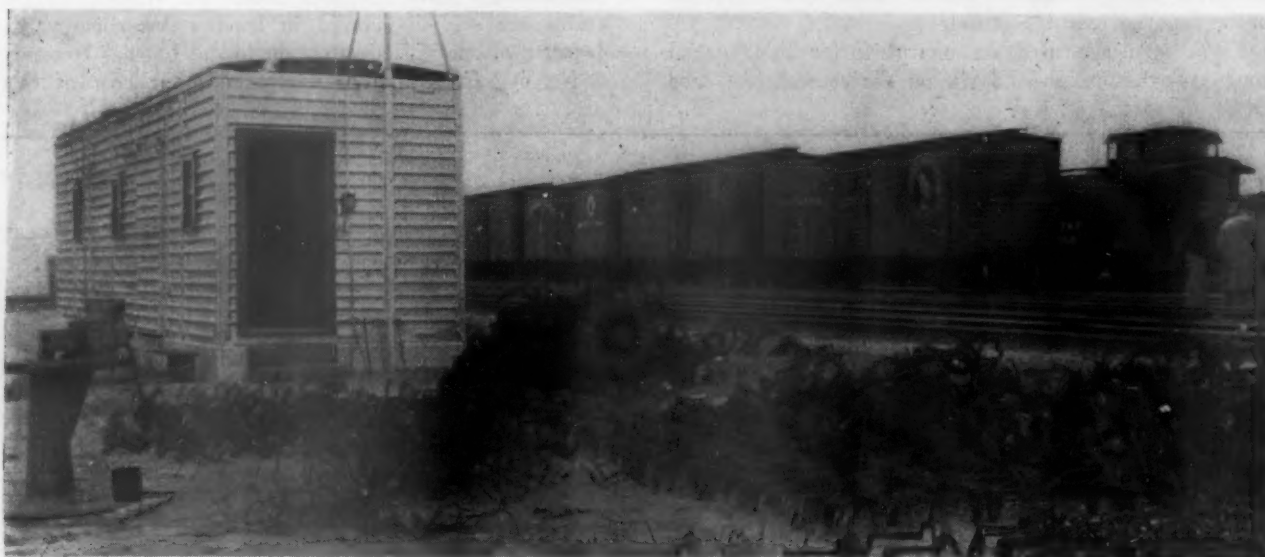
The cost to the Santa Fe of installing an average of 46,793 spring packing retainers a month on the system during 1952 amounted to \$22,941 for material plus \$2,271 for labor, or a total of about \$25,212 a month. Against this must be credited 20,840 reusable retainers, removed each month from foreign cars going off line, the net value of these retainers being \$10,211 minus \$312 labor cost of removal, or \$9,899. That made the net

cost of applying spring packing retainers to cars on the Santa Fe about \$15,313 a month during 1952.

#### Large Increase Shown

Results of the greater attention given to journal boxes, especially those on symbol trains, are exemplified and summarized in the three charts and four tables accompanying this article. Referring to the graph showing car-miles per hot box set-out between terminals, the trend of car-miles per hot box set-out on the Santa Fe is shown for three summers and two winters to be well above the A.A.R. average, in fact 917,875 in December 1952, when the A.A.R. figure was 534,040 car-miles or 42 per cent less.

The remarkably similar characteristics of these curves for each year indicate that climatic conditions probably have more influence on hot boxes than almost all other variable factors combined. Nevertheless, the increase of the December 1952 peak over December 1951 of nearly 173,000 car-miles is generally credited to the improved journal servicing program. Why the mid-summer dip in 1952 almost reached that of 1951 can-  
(Continued on page 57)



INSPECTION and repair station for removed spring packing retainers at the Argentine yard.



## This New Swing Span Towed to Site

After erection on falsework 368-ft. structure was floated on barges 80 miles and placed in position on Great Northern branch with aid of tidal movements



ROUTE of the bridge while being moved to Swinomish Slough is shown by the dotted line.

When the Great Northern had to install a new 368-ft. through-truss swing draw span on the same alignment as the one it was to replace, the road adopted the unusual expedient of erecting the structure elsewhere on falsework and floating it on barges to its final resting place. In this work advantage was taken of tidal movements in loading it onto the pivot pier.

The bridge site involved is the crossing of Swinomish Slough by the GN Burlington-Anacortes branch. This is a navigable arm of salt water which links Padilla and Skagit bays on upper Puget Sound in western Washington. The crossing consists of a swing span with approaches that give the structure a total length of 934 ft. Renewal of the swing span had become necessary because the old structure, erected in 1891, had become obsolete for present-day loadings. The plan of renewal was to place the new structure on the same alignment as the old one but to position it lengthwise on a new center pier so that the old pivot pier would serve as the end pier at the east approach. A new pier was built to support the west end of the new span.

Because of this arrangement of the new span on the existing alignment it was reasoned that the best procedure would be to erect it elsewhere and float it into position. A primary consideration was that any other method of construction would have required that the branch be taken out of service for at least two or three weeks.

The actual placement of the new span and the removal of the obsolete span was accomplished within a 12-hour period on two successive high tides. Although the com-





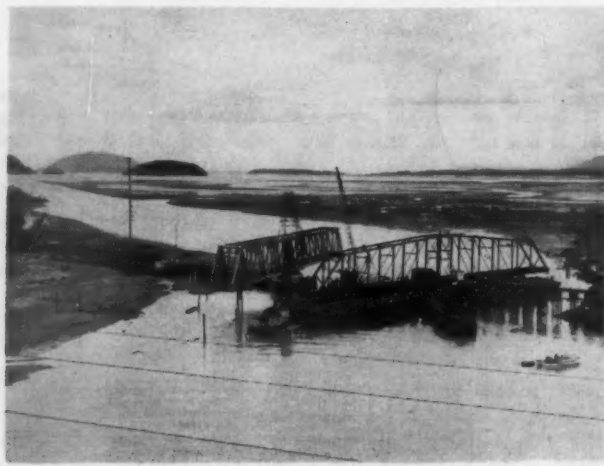
**FALSEWORK**, supported by timber piles driven in the Duwamish waterway, supported the span during erection. In the foreground is Norvin Ekren, Great Northern project engineer and designer of the span.



**THE 775-TON SPAN**, supported on two 120-ft. barges, was floated from its construction falsework after all but the supporting bents at either end and the center were removed. Barges were placed under the span at low tide.



**EN ROUTE** the span was conveyed by three tugs, one of which is not in sight in this view. Here the span is passing through Deception Pass on the upper section of Puget Sound.



**THE CROSSING** at Swinomish Slough on the day the new span (left) was placed in position on its pivot pier. Here the barges have been transferred to positions under the old span preparatory to floating it off on the next high tide.



**NEW SPAN** was swung into operating position as soon as the old bridge had been floated away. One end of the span rests on the old center pier, to which an extension of the timber trestle approach has been constructed. Taken out of service at 6 p.m. on June 12, the bridge went into service at 8 a.m. on June 16.

plete job took three days—Saturday, Sunday and Monday (June 13-15)—the branch was out of service only one day because it does not operate on week ends.

The primary contract for the project was awarded to the Manson Construction & Engineering Co. The Arthur Fralick Company subcontracted the erection work. The site chosen for fabrication of the span on falsework was alongside the Manson Company's pier on the Duwamish waterway at Seattle, 80 miles south of the bridge site.

With the riveting completed and part of the bridge machinery installed, the span, weighing 775 tons, was ready to be floated on June 10. With all but the supporting end and center bents of the falsework pulled away, two 120-ft. barges were moved under the span on low tide that morning. At high tide that afternoon the span, 22 ft. wide and 34 ft. high, was riding the waves.

The following afternoon, June 11, stoutly secured to its barges and maneuvered by three tugs, the span was towed out into Elliott bay, at the foot of downtown Seattle. There it began its trek up Puget Sound to the bridge site, 5½ miles south of Anacortes.

Narrow and hazardous Deception Pass, which links

the inner and outer waters of upper Puget Sound, was the trickiest obstacle to the entire movement, which was handled for Manson by the Foss Launch & Tug Co. However, the turbulent waters were smoothly negotiated at low tide the following morning, June 12.

#### Placed in Position at High Tide

On high tide at 3 a.m., June 13, in a driving rain-storm, the span was eased into position over its pivot pier and securely tied, although left maneuverable enough so that it could be inched in any direction. By 5:30 a.m. the gears in the span and the pier had meshed perfectly, and by 6:40 a.m. the span was resting high and dry on the pier.

The new pivot pier and the new end pier had been constructed previously just west of the old pivot pier and

beneath the old span in closed position. Next the barges were released from the new span and moved into position under the old, which was floated from its pivot pier on the rising tide that afternoon. By 6 p.m. that same day the old span was on its way to Seattle, to be salvaged by the Manson Company.

On June 14 and 15 decking and rails were placed on the new span and work on the timber approaches completed. At 8:30 a.m., June 16, the line was back in service. The new swing draw span will provide a 100-ft. clear channel as compared with the former clearance of 92 ft. The swing span is powered by two 25-hp. motors which can be controlled either from the span itself or remotely from the shore.

Total cost of the unusual project was nearly \$750,000, but was estimated to be less than if the job had been handled by conventional methods.

## HOW SANTA FE REDUCES HOT BOXES

(Continued from page 54)

not be accounted for without checking comparative temperatures, which may have been higher and thus augmented journal lubrication difficulties in 1952.

Another graph similarly shows Santa Fe performance on the basis of car-miles per hot box rather than car-miles per hot box set-out. The effect of the journal-box servicing program, initiated on westbound symbol trains in September 1951, extended to eastbound trains in April 1952, and in general effect by October 1952, is made more clearly apparent by curves in this chart. Even in the difficult summer months, car-miles per hot box on the retained symbol trains was roughly twice the system average and this figure soared to almost two million miles per hot box in December 1952, as compared with a system average of 528,747, or less than one-third as much. The comparison with figures for "all other than retained trains" is even more favorable.

#### Seasonal Trend Shown

Curves showing the number of hot boxes in the third graph reflect the familiar seasonal trend and in July 1952 totaled 1,914, or nearly twice the 1,000 total system set outs reported. The difference between these two figures, or 914, represents hot boxes found in yards and not responsible for train delays. As is usual on many roads, foreign cars gave the Santa Fe more hot box trouble than system-owned cars. They made roughly 40 per cent of the total system freight-car mileage of 2,048 million in 1952 but were responsible for 4,284 set outs in that year, as compared with 2,200 set outs of system cars.

Figures used in preparing the graphs are given in Tables 1, 2 and 3. Table 4 contains a "breakdown" of hot box causes in 1952 on the Santa Fe and points unmistakably to a number of conditions much in need of correction, at the same time leaving others doubtful. For example, the most common single cause, responsible for 36.7 per cent of all hot boxes on the Santa Fe in 1952, is listed as "unknown," doubtless because the

TABLE 4—Resume of Hot Box Causes on the Santa Fe, 1952

Mechanical Conditions	Number of Instances
Insufficient packing	227
Dry packing	669
Waste grabs	3,453
Dirty packing	74
Flat wedges	506
Broken brasses	290
Rough journals	231
Rolled packing	42
Wheels out of round	43
Water in box	94
Worn-out brasses	1,369
Wedges missing	17
Other causes	599
Unknown	4,420
Total	12,034
Type of journal box (8 months)	
Integral	7,810
Separable	1,430
Unknown	157
Number of old packing dates	1,222
Cars having all boxes repacked	
System	62,525
Foreign	31,724
Total	94,249



TYPICAL EXAMPLES of defective brasses removed from Santa Fe and foreign freight cars.

"evidence was destroyed." The next most frequent cause, namely waste grabs, accounted for 28.7 per cent; worn-out brasses, 11.4 per cent; dry packing, 5.6 per cent; and flat wedges, 4.2 per cent. The work of repacking journal boxes was done on 62,525 Santa Fe system cars and 31,724 foreign cars in 1952. The repacking date was overdue on 1,222 of the cars developing hot journals.



BOX CAR-MILES CUT BY...

## Direct Route Plan for Empties

Automatic outlets provided for unneeded Rule 3 box cars—Clerical costs of car handling expected to be reduced

Special Car Order No. 90 of the Car Service Division of the Association of American Railroads may prove, some of its proponents say, as big a boon to the car distributor as C.T.C. has been to the train dispatcher.

This order is a plan for sending home via direct route all surplus empty box cars of indirect connection ownership (Rule 3 cars). The plan (*Railway Age*, May 11, page 9) eliminates the need for getting home routes on surplus Rule 3 box cars—thus avoiding switching of such cars to the "hold track" while the holding roads await this information—and provides regular direct routes over which they will be forwarded homeward.

The plan abolishes as to box cars the need for reciprocal short routing arrangements with connections, and the accompanying bookkeeping, for disposing of cars having circuitous home routes. Perhaps best of all, say its advocates, it avoids the circuitous movements of many Rule 3 box cars which for one reason or another, have retraced their service route in an attempt to get home.

Many transportation officers have long felt the need for some such plan. Records of the C.S.D. and of individual roads are said to show many cases where cars have been held three to five days or more while home route information was being sent to the holding line. Sometimes proper information was not received and cars were started home, roundabout, to get them off the holding line to avoid further per diem expense. During periods of falling business, it was not unusual for some of the larger roads to receive several hundred requests per day for home routes or for disposition of foreign cars. It is expected that all this will be a thing of the past, with respect to Rule 3 box cars, if the plan works.

### Provides "Indirect Connection" Outlets

Briefly, the plan provides each railroad with outlets for all indirect connection box cars. It provides also just which ownerships each road must accept, at specific junctions, from its connections. These deliveries and receipts have been set up so that, as well as can be forecast, the burden of hauling empty cars will not be out of line with what a road has been required to do in the past; or with its obligation to haul a car an empty mile in return for a loaded mile, if traffic conditions make that necessary. The percentage of empty box car-miles to total box car-miles is not as high as in the case of some other types of equipment, but the traffic pattern of the country does require a considerable movement of empty box cars East to West and North to South. It is the firm belief of those who have developed the plan that no road will be required to perform a greater percentage of empty miles in proportion to loaded miles than it has done in the past. The possibilities of inequities

developing have not been overlooked. These, it is thought, can be adjusted promptly. The plan was effective July 1. Consequently, there should be, under normal business conditions, several months of good demand for box cars, so that there should not develop immediately any substantial surplus anywhere, with consequent heavy application of the plan. Late October and the months of November and December are the period when it may be expected to come into full use.

Proponents say the plan will have served its purpose if, as they expect, it will effectively stop such circuitous movements as eastern and southeastern ownerships moved "homeward" empty in considerable volume from Texas points via Colorado; Texas ownerships moved "homeward" empty from New York to Chicago, Minneapolis and Omaha; southeastern ownerships moved "homeward" empty from New Jersey to Chicago and there delivered to western roads because these were the "home routes."

### How It Works

To illustrate the application of Special Car Order No. 90 to a particular road, there are reproduced herewith portions of pages of instructions which give the ownerships to be delivered off line and received on line by the Delaware, Lackawanna & Western. The Lackawanna, like other eastern seaboard roads, handles eastward a substantial volume of overhead traffic for New England, as well as export and domestic freight for New York, New Jersey and Pennsylvania destinations. Like other roads similarly located, its westward traffic loaded in box cars does not, normally, equal its eastward traffic loaded in this type of equipment. Consequently, there is a flow of empty box cars to the Lackawanna's western junctions.

This flow formerly consisted of surplus box cars, regardless of reporting marks, which came to it through these western junctions. Box cars owned in the Southeast or in New England, the first record on which was from the West, were likely to be returned there. In contrast, under the direct route plan, surplus Southeastern box cars will all be delivered by the Lackawanna to the Central of New Jersey or to the Reading, for movement to Potomac Yard if those roads have no loading for them. Surplus New England box cars will be delivered by the Lackawanna to the Delaware & Hudson or to the Lehigh & Hudson River, regardless of loaded route.

The Lackawanna normally has about 5,000 foreign box cars on line. Of these, about 46 per cent, or 2,300 cars, are Rule 2 cars (owned by its direct connections), while 54 per cent, or 2,700 cars, are Rule 3 cars now subject to the provisions of the plan. Studies made during the preparation of the plan indicate that, generally, two to

three per cent of the total number of indirect connection box cars on any railroad are likely to become "surplus" on any one day. Using this figure for the Lackawanna, it may reasonably be expected that there may be a movement off-line via the listed outlets of some 50 to 75 empty Rule 3 cars daily. Of course, during periods of good business practically no serviceable box cars will be sent home empty, whereas in periods of dull business such movement will be comparatively heavy.

Reciprocal short routing arrangements, of which there are a number now operative, have as their objective the very purpose of the direct route plan, i.e., to get unwanted

cars home with a minimum of empty mileage. These short routing arrangements undoubtedly have saved many thousands of car miles each year, but in the opinion of advocates of the plan these savings will be trifling as compared with those possible under the plan. In the final analysis, the plan embodied in Special Order No. 90 is nothing more or less than a multitude of reciprocal short routing agreements, rolled into one and made generally applicable all over the country. The plan is described by its proponents as a forward step in efficient car handling, like the switch from mileage to per diem some fifty years ago.

## Delaware, Lackawanna & Western Railroad

### TO AGENTS, YARDMASTERS AND ALL OTHERS CONCERNED:

Attached is copy of Special Car Order CSD 90, direct route plan for handling Rule 3 box cars which governs the disposition of surplus empty Rule 3 (indirect connection) box cars effective July 1, 1953.

Under the provisions of this order, surplus empty Rule 3 box cars, except those received in switching service and auto device and parts cars, are no longer to be delivered in home route, but are to be delivered to connecting lines as shown in instruction "A" attached. In order to insure

proper movement to connecting lines of these empty cars by the effective date of July 1, 1953, the forwarding of empty Rule 3 box cars in home route will be discontinued as of 12:01 a.m. June 29, 1953 and movement thereafter will be in accordance with instruction "A".

Also, under the provisions of this order, empty box cars that are Rule 3 on connecting lines (except cars in switching service and auto device and parts cars), are no longer to be received in home route, but are to be received only as specified in the order. Instruction "B" lists these ownerships and, effective July 1, 1953, no other empty Rule 3 box cars are to be received from the roads named.

This makes no change in the handling of empty Rule 2 (direct connection) box cars nor in the handling of empty box cars from short lines including the Brooklyn Terminals.

## SPECIMEN INSTRUCTIONS MAKING SPECIAL CAR ORDER NO. 90 EFFECTIVE

### INSTRUCTION A

Direct Route Plan Rule 3 Box Cars  
(except auto device and parts cars)

Disposition of direct route plan Rule 3 (indirect connection) surplus empty box cars: To be delivered by DL&W to the railroads shown at the junction points indicated.

Rule 3 Ownerships	Empty & Surplus at	Card to & Deliver to
AA	Any point	Black Rock-Wabash
AC	" "	Black Rock-CN
ACL	Stroudsburg & East	Phillipsburg-CNJ
"	West of Stroudsburg	Rupert-RDG
ACY	Any point	Buffalo-Erie
AT&SF	" "	Buffalo-NKP
A&WP	Stroudsburg & East	Phillipsburg-CNJ
"	West of Stroudsburg	Rupert-RDG
BAR	Stroudsburg & East	Pt. Morris-L&HR
"	West of Stroudsburg	Binghamton-D&H
B&LE	Stroudsburg & East	Phillipsburg-CNJ
"	West of Stroudsburg	Rupert-RDG
B&LE	to Owego	Buffalo-NKP
B&LE	West of Owego	Etc.
Etc.	Etc.	Etc.

### INSTRUCTION B

Direct Route Plan Rule 3 Box Cars  
(except auto device and parts cars)

Lackawanna will accept only the empty Rule 3 box cars from connecting lines as shown below:

Junction Point	From	
Augusta, NJ	L&NE	AC-CN-CP-Ont-Tem-TH&B
Bangor, Pa.	L&NE	AC-CN-CP-Ont-Tem-TH&B
Bath Jct., Pa.	L&NE	AC-CN-CP-Ont-Tem-TH&B
Belfast Jct., Pa.	LV	None
Bergen Jct., NJ	Erie	N&B
" " "	NYS&W	None
Berwick, Pa.	PRR	None
Etc.	Etc.	Etc.

Direct Route Plan Rule 3 Box Cars

Ownerships to be delivered by Lackawanna to indicated road at:

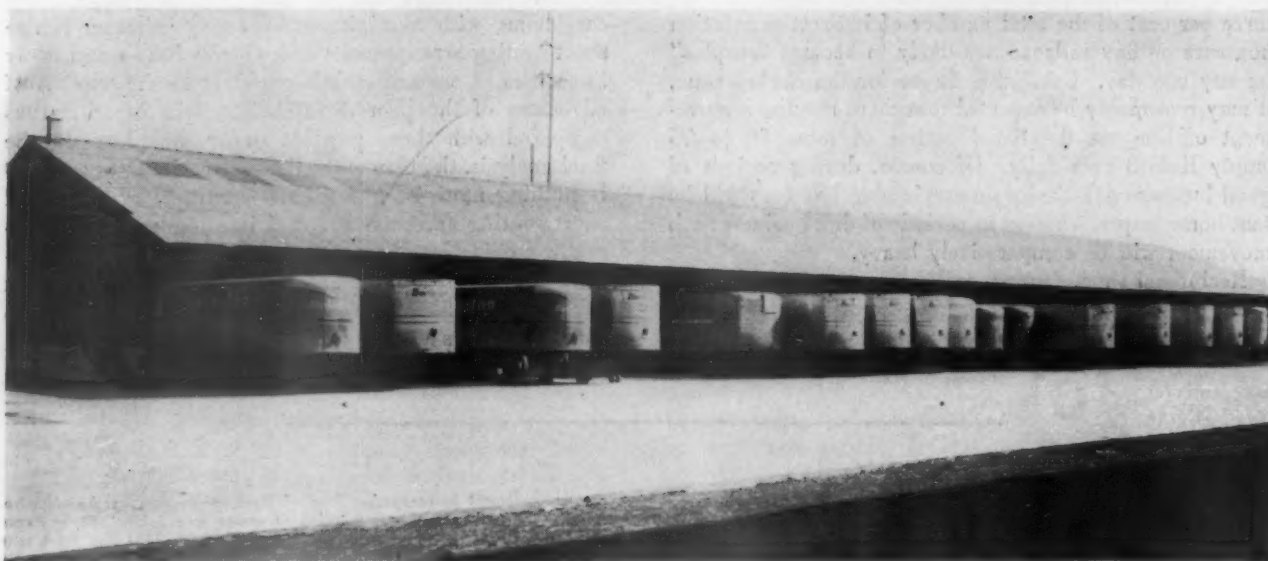
Ownerships	Bing- hamton	Buffalo (Niagara Frontier)	Northum- berland	Phillips- burg	Rupert	Any Jct.
AA		WAB				L&HR
BAR	D&H					L&HR
B&M-MTC	D&H					L&HR
CV	D&H	CN				
CIL-CI&L		ERIE				
D&H						
DL&W						
D&M-Det&M		C&O Sys.				
D&TS-D&TSL		WAB				
DT&I		WAB	PRR			
ERIE						
GTW		CN				
INE-L&NE						
LV						
MEC	D&H					L&HR
*NYC Sys.						
NKP-W&LE						L&HR
NH						
NYOW						
NYSW						
PM (See C&O)						
P&LE-PM&K&Y		NYC Sys.		CNJ-CRP	RDG	
P&WV		PRR		CNJ-CRP	RDG	
RUT.	D&H					
WAB.						
W&LE (See NKP)						
Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.

### Direct Route Plan Rule 3 Box Cars

Ownerships to be received by Lackawanna from railroads and at points named:

Receive	At:	Ownerships:
From:		
B&O	Buffalo (Niagara Frontier)	NB-N&B ONT-TEM
CNJ-CRP	Taylor	AC-CN CP NJ&I ONT-TEM THB
		WAB BCK
C&O	Buffalo (Niagara Frontier)	CNJ-CRP D&H FEC G&F NB-N&B RDG
D&H	Binghamton- Scranton	SA-S&A
		AA ATSF C&O-PM CIL-CI&L CB&Q
		CRIP C&S DRGW-D&SL D&M-Det&M
		D&TS-D&TSL EJ&E FWDC IN-I, Nor.
		ITC LNE-L&NE M-I (Mo. Ill.) MWR
		M&W NB-N&B PH&D TP&W THB WAB
ERIE	Binghamton	NB-N&B
ERIE	N.Y. Term.	NB-N&B
L&HR	Any Jct.	AC&Y AC AA CP C&O-PM CNW-
		CMO CGW C. Range D&M-Det&M
		D&TS- D&TSL EJ&E ELS-E&LS GTW
		GN IHB MILW-CTSE NJ&I NKP-W&LE
		LE NB-N&B NP ONT-TEM PH&D SOO
		SPS-SP&S THB WAB BCK
Etc.	Etc.	Etc.



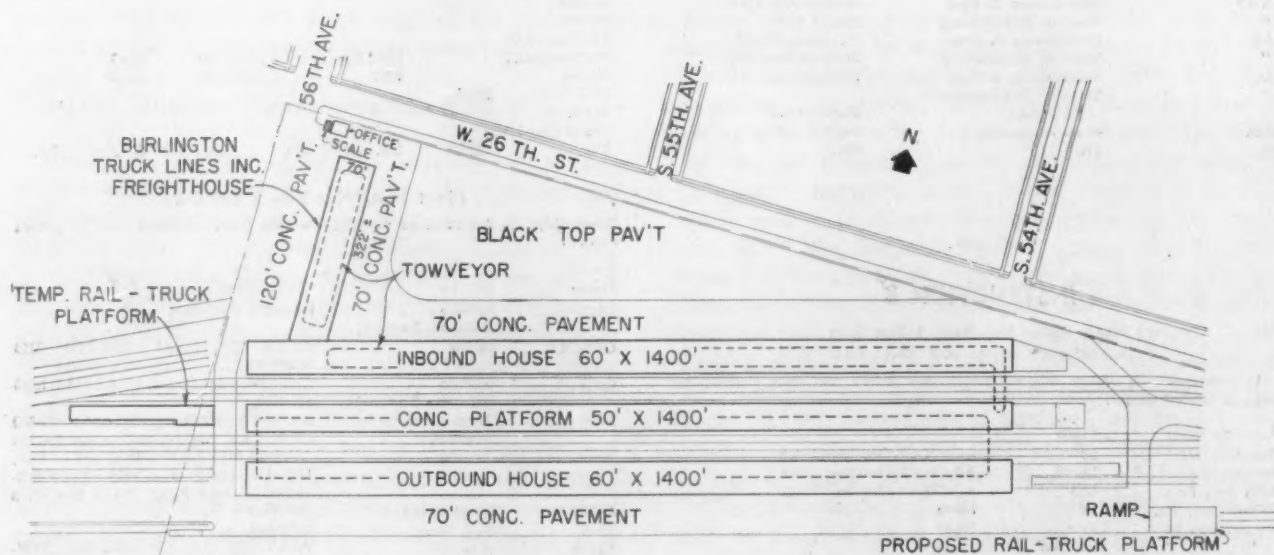


WEST SIDE of the truck freighthouse has 31 tailboard spots for over-the-road tractors and trailers. The other side, for city receiving and delivery, has 29 tailboard spaces.

TRUCKING SUBSIDIARY GETS . . .

## Modern Freighthouse and Garage

Move from congested area to site of Burlington's \$4.1-million freight-terminal project at Chicago locates trucking affiliate where it can expand and coordinate service with the railroad



PAVED EXTENSION from Fifty-sixth avenue fronts the west side of the truck terminal. This sketch also shows the relationship of the terminal to the Burlington's \$4.1-million rail-truck freight terminal now under con-

struction at this point. When this project is completed, four-wheel platform trucks will be able to move under roof from the Towveyor system in the truck freighthouse to the new facility for coordinating truck and rail service.

Complete new facilities for freight-trucking operations and for the maintenance of all its truck equipment have been provided in the Chicago area for Burlington Truck Lines, Inc., a subsidiary of the Chicago, Burlington & Quincy. These facilities, consisting of a truck freight-house and a combination garage and shop, are part of the railroad's \$4.1-million rail-truck freight terminal project\* being constructed along Twenty-sixth street between Fifty-fourth and Fifty-sixth avenues in Cicero, Ill., adjacent to the railroad's Morton Park classification yards.

The former BTL facilities were located in the south end of the railroad's freighthouse No. 1, situated on Canal street between Harrison and Polk streets in a congested business district of Chicago. These quarters were too narrow for the efficient use of mechanized equipment, and although convenient to the railroad's l.c.l. facilities at the north end of the same building for the interchange of freight, permitted only 24 truck spottings. Thus hampered in its operations and growth, Burlington Truck Lines for a number of years had wanted to move to a more accessible outlying location where a modern building with adequate room could be constructed.

The expense of such a move could not be justified until 1952, when a prospective tenant sought use of freighthouse No. 1 in its entirety as a forwarding station. Meanwhile, the railroad had also found it desirable to move its l.c.l. facilities out of the congested city district, and was making plans for the construction of an extensive new freighthouse to consolidate the business of several small city freighthouses in a new structure on its property at Cicero, where existing primary highways would make it readily accessible to trucks and where it would be close to the existing classification yard. This location was also highly desirable for the Burlington Truck Lines because of its proximity to major highways and its growing coordinated service with the railroad.

It was decided to build the freighthouse and garage for Truck Lines first, thus enabling the truck line to vacate its part of freighthouse No. 1 and permitting partial occupancy of this building by the new tenant. The new truck freighthouse was built with its west side parallel with a concrete pavement extension to Fifty-sixth avenue. This pavement was given a width of 120 ft. to allow space for truck maneuvering, as well as for the parking of stand-by units in the event that the entire tailboard space of the freighthouse is occupied. On the other side of the new freighthouse, a 70-ft. wide concrete pavement was constructed.

#### **Unobstructed Floor Area**

The building is a standardized fire-resistant structure erected by the Luria Engineering Company, and is 70 ft. wide by approximately 322 ft. long. It is of steel rigid-frame construction, with columns at 20-ft. centers, and provides a clear span across the width of the freighthouse. Two four-panel overhead rolling doors were installed between each of the columns along both sides of the building. The north end wall is of brick, while the south wall, where the structure will adjoin the new freight terminal, is covered with asbestos-cement siding. Cor-

rugated asbestos was applied as siding above the door openings and also as roofing. The roof overhangs 10 ft. beyond the sides of the building. The floor is reinforced concrete on a tamped earth fill, and is cantilevered out beyond the sidewalls to provide a 2.5-ft. loading apron guarded by a heavy oak timber bumper.

The interior is daylighted by two rows of corrugated plastic panels applied on each side of the roof ridge in lieu of the asbestos panels. For night operations, the interior is lighted by three rows of mercury-vapor lights. The freighthouse is unheated.

Offices were constructed along the north end of the freighthouse and include an area for truck drivers to use when reporting, a room for the truck dispatcher and several clerks, an office for the foreman, and toilet facilities. Other clerks and a telephone switchboard are housed in a small existing building just north of the new freighthouse. This building was purchased by the railroad from a former coal-yard tenant of this property, along with a truck scale, and is being used temporarily until the new railroad freighthouse is built, when these clerks and switchboard will be moved to offices that will be constructed on the second floor of that building. It is also the intention later to install a new truck scale.

#### **Towing System Employed**

A Towveyor system was installed by the Jervis-Webb Company within the truck freighthouse for hauling freight loaded in platform trucks from one side of the freighthouse to the other. This system consists of an under-floor endless chain approximately 700 ft. long, which makes a circuit of the interior at a distance of about 15 ft. from the doors and end walls. It has towing dogs spaced about 12 ft. apart which engage towing pins of four-wheel platform trucks. It takes about five minutes to make a complete circuit.

The towing pins of the platform trucks are of special design. The pins are 7/8 in. in diameter so they can drop into the 1-in. wide slot of the Towveyor track. For easy action, the pins are enclosed within a pipe sleeve and are raised by an iron loop handle. Each truck has two pegs, one over the other, on which the loop of the pin handle can be hooked. When hooked over the upper peg, the towing pin is held several inches above the floor; when hooked over the lower peg, the towing pin drops of its own weight and slides along the floor until it drops into the floor slot of the Towveyor system. The concrete floor is surface hardened along the path of the platform trucks for longer wear. Safety stop switches for the Towveyor system are installed on every second wall column for emergency purposes.

The west side of the freighthouse has 31 tailboard spaces, numbered from north to south. About two-thirds of these are used by out-bound over-the-road trucks and tractor-trailers and the remaining portion by inbound over-the-road units. The other side of the freighthouse has 29 tailboard spaces, with the numbering system continued from south to north. This side is used for delivering and receiving city business. Hence, the Towveyor system is, in effect, the link between the city pick-up and delivery service and the inbound and outbound over-the-road freight service.

When an over-the-road unit arrives at this freight-house, the driver turns his tractor and trailer (which is

\*See "Burlington Building Rail-Truck Terminal," *Railway Age*, May 11.





**SPECIAL FLAT CARS** are used for hauling trailers by rail rather than by highway when the trailers are loaded with freight destined to a truck terminal at a point that is also common with the railroad. The trailers are backed up an incline to this timber platform and onto the cars.



**NEW GARAGE**, about four blocks from the truck freight-house, includes a shop for the maintenance and repair of road units. The structure is a prefabricated building and has aluminum siding and roofing.

locked under seal) over to a truck hostler and reports with the freight bills of his load at the freighthouse office. If the driver has a short run, i.e., one that permits a round trip within nine hours, he is immediately assigned another tractor and trailer for the return run. If the run is longer, the driver ties up for his required rest period. A rate clerk in the office checks over the freight bills for accuracy and marks on them the spot number of the truck to which the freight is to be transferred. Meanwhile, the hostler has backed the incoming trailer into an inbound unloading spot.

The freight bills are then turned over to a checker who, after first checking the seal number on the trailer doors to see that it is the one shown on the records, supervises the dockmen who unload the merchandise and place it on the platform trucks. Each of these trucks has a numbering plate affixed to the upper part of the forward end stakes on which the checker chalks the spot number shown on the freight bill. The trucks also have small receptacles in which the freight bills for each piece of merchandise can be deposited. Only freight for one truck spot is loaded on any one truck, so several platform trucks are used when unloading a trailer. When a trailer has been entirely unloaded, the several platform trucks are pushed toward the Towveyor



**ROOF PANELS** of corrugated plastic daylight the interior of the truck freighthouse. The Towveyor system circles the platform and tows freight loaded on four-wheel platform trucks from the over-the-road truck side to the city delivery-and-receiving side, and vice versa.



**PREVENTIVE-MAINTENANCE** program is followed by BTL in caring for its fleet of trucks, tractors and trailers. The garage is completely equipped to handle minor and heavy repairs. Spare parts are in a storage room.

and the towing pin handles lowered in the floor slot, after which the chain takes them in tow.

Workmen known as chainmen are stationed on each side of the freighthouse to remove the platform trucks from the Towveyor when they are opposite the truck spots to which they are assigned. Stowers then load the freight in the highway trucks and trailers, placing the freight bills for each piece in a large envelope which is affixed to the interior wall of each trailer.

The stowers are taught how to load the trucks and trailers properly, not only to avoid damage by shifting loads but also to comply with state axle-loading regulations. Since the freight bills show the weight of each piece the stowers can control the distribution of the accumulated load in each trailer and they become quite expert in this work. The axle loadings of combined tractors and trailers are checked on the truck scales before they are permitted to leave the terminal and redistribution or lightening of the load is accomplished if required. Just before the loading of an over-the-road trailer has been completed the dispatcher calls the driver next in line to go on duty, so that by the time he reports for work the trailer is loaded, sealed and ready to roll. The several freight bills are removed from the wall envelope before the doors are sealed.

The east side of the freighthouse for the pickup and delivery service is used at all hours of the day but the trucks come and go only during normal business hours, i.e., from 7 a.m. to about 5 or 6 p.m. During the night, the delivery trucks are backed up to the dock so they can be loaded with freight from incoming over-the-road trailers for delivery to consignees the following day. The Chicago area is divided into approximately 12 p.u. & d. zones, and the trucks are spotted accordingly at the freighthouse.

### **Dispatcher Controls Trucks**

During the day, telephone calls for trucks to pick up shipments are being received in the adjacent small office building. As these calls come in, the information as to the name of the company, address, approximate weight, and number of pieces is written down on a Telautograph sending machine which transmits the data simultaneously to a receiving machine in the freight-house dispatcher's office which writes it on a stiff paper. The dispatcher tears off these messages and deposits them in pigeon holes, one of which is assigned to each delivery zone driver.

The p.u. & d. drivers keep in touch regularly by telephone with the dispatcher so they can be informed of the pick-up calls and thus give prompt service to the customers. When the truck has a normal load, or when another truck at the freighthouse has been loaded with incoming freight the dispatcher instructs the driver to return. On arriving at the freighthouse the driver reports to the office with the bills of lading for the freight he has picked up.

In turn, the driver is handed the freight bills for the merchandise already loaded on another truck for his zone, together with any pick-up call messages received while he was en route, and the process is repeated.

Bills of lading from the reporting drivers are turned over to a routing clerk who assigns and marks the truck spot number on each one. The bills of lading are then given to a checker who supervises the dockmen unloading the merchandise and checks the pieces. Later the bills of lading are returned to the office where a rate clerk notes information thereon as to the rating and billing so that freight bills can be made for accompanying the shipments. The freight bills and copies are all numbered consecutively so that tracing, billing and filing can be handled efficiently.

For certain hours of the day, Burlington Truck Lines has found that over-the-road trailers can be moved faster to their destination by rail than by truck tractor to large cities that are common to both transportation agencies. At such times, the trailers are taken a few hundred feet from the freighthouse and backed up a ramp to a timber platform, then onto Burlington flat cars especially equipped for this service. The trailers are firmly blocked on these cars against forward and backward movements and are chained at their sides to the sides of the cars to prevent overturning. When the cars arrive at their destinations, tractors again take the trailers in tow to the local truck terminal. Proximity of the Cicero truck freighthouse to the railroad's Morton Park classification yard assures the latest possible switching for inclusion on departing fast trains.

Also, there are times when the Burlington Truck Lines

receives such a large amount of freight from shippers for a destination which is common with the railroad that it will fill one or two box cars. In such instances where the freight is destined to a point where BTL has a truck terminal, this freight will be stowed in railroad box cars which are spotted at one side of the timber platform. These cars are handled in fast trains so that the result is faster service for the shippers.

At the present time, platform trucks that have been loaded with this freight are coupled together into trains and hauled by a small industrial tractor down a temporary ramp at the south end of the truck freighthouse to the nearby timber platform. When the railroad completes construction of its large contiguous l.c.l. freighthouse, these platform trucks will be taken from the Towveyor line in the truck freighthouse and, without leaving roof cover, placed on the Towveyor system of the railroad freighthouse for delivery to designated box cars.

### **Equipment Well Maintained**

The combination garage and shop built for the repair and servicing of the BTL trucks is about four blocks from the new truck terminal. The garage is a Butler prefabricated steel-frame structure with aluminum roofing and siding, 60 ft. by 200 ft. in size. Across one end of the building are a foreman's office, toilet facilities, parts room, and boiler room. Adjoining this area is a large repair shop, 40 ft. by 60 ft., then an equipment-washing room 20 ft. by 60 ft. These areas are heated by projection-type thermostatically controlled unit heaters supplied with steam from a Kewanee oil-burning boiler. The remainder of the building, 60 ft. by 120 ft., is used as garage area and is unheated.

On one side and the two ends, the walls have projected-type windows equipped with screens. The other side has nine electrically operated overhead rolling panel doors, 12 ft. wide by 12 ft. 8 in. high. The roof is curved, supported 15 ft. overhead at the eaves by bow-string trusses, and has two rows of curved corrugated translucent plastic panels for daylighting the interior.

The equipment washing room can handle the largest size tractor and trailer used in combination by the BTL. The repair room, or shop, is equipped with a Budgit 2-ton monorail crane for making engine changes, an air compressor, welding equipment, a floor-type hydraulic lift for raising both tractors and trailers together or separately, and work benches. Other equipment includes an Aeroil transmission jack, a Black & Decker bench grinder and electric drills, a Blackhawk floor jack, a Lincoln Electric Lubrigun, a Walker stand and jack, an oxygen and acetylene regulator, testing devices, and miscellaneous small tools, such as socket sets, grease guns, valve-seat dial gages, vises, tachometers, and micrometers.

Trucks and tractors are serviced with gasoline, diesel fuel oil and lubricating oils from service pumps on an adjacent concrete apron.

Plans for the truck freighthouse and garage were made under the general direction of F. E. Sperry, president of the Burlington Truck Lines, and assistant vice-president of the CB&Q, H. A. Aalberg, chief engineer of the railroad, and A. H. Simon, engineer of buildings. The work was carried out under contract.





ROUTES of the Turkish State Railways are indicated by the solid lines within the country's borders.

TO EXPAND THEIR FACILITIES . . .

## Turkish Rails Spend \$146,397,000

By JOSEPH L. WHITE

Former consultant to  
Turkish State Railways

If the "cold war" turns hot, Turkey will be the free world's front line of offense and defense in the Middle East, and the Turkish State Railways will be an important factor in military operations. To increase the capacity of the railways, both to carry a rapidly increasing peacetime load and to prepare for possible war, the Turkish government in recent years has approved expenditures of \$146,397,000 for construction and equipment.

The Turkish State Railways, owned by the government and operated by the Ministry of Communications (which also operates the post office, telephone and telegraph, domestic air lines and the greater part of the country's merchant marine fleet), consist of 4,720 miles of road and serve practically all important ports and interior cities. There are no privately operated communication systems, railways or domestic air lines, but privately operated buses and trucks give the railways substantial and increasing competition.

In Turkey, mountains come down to the sea along the entire coast line. To link seaports and centers of population with the interior, railways must climb over mountain ranges, with grades up to 2½ per cent even through the lowest mountain passes. The railways, located more with an eye to economy of construction than easy grades, wind around and through mountains with many tunnels and reverse curves. This requires well ballasted track and heavy expenditures for maintenance of way and structures.

Turkish freight trains are classified as "fast freight" and "slow freight." Passenger trains are classified as "express," which handle no freight cars, and "passenger-mixed," which handle up to 10 passenger-train cars and 20 freight cars. "Passenger-mixed" trains are very profitable, as the revenue per train-mile from passengers and freight is well over twice that of the "express" trains, while direct expenses per train-mile are little more. "Passenger-mixed" trains also provide overnight merchandise service between Istanbul and Ankara and other points, which is an important factor in meeting truck competition on the highways.

To provide fast daylight passenger-train service between Istanbul and Ankara, the Turkish railways recently purchased 16 three-car diesel motor trains which make the 358-mile run in eight hours 46 minutes, compared with 12 hours 35 minutes for the "Taurus Express," the Turkish section of the famed "Orient Express," which is the fastest daylight steam-powered express train between the two cities. These fast motor trains, which run over 80 m.p.h. on level stretches, are expected to develop daytime tourist travel in Turkey.

When I first arrived in Turkey in July 1947, the Truman program for military aid to Greece and Turkey was just getting under way, and economic aid under the Marshall Plan had not yet begun. The Turkish railways had a monopoly of domestic inland transportation. There were no labor unions and employees did not have the right to strike against government operated agencies. Consequently, there was little pressure to increase wages and improve working conditions, with their concomitant increases in operating expenses. On the other hand,



**TO SURMOUNT** the heavy grades in Turkey, the State Railways use powerful coal-burning steam locomotives, like this 2-10-0, in passenger and freight service.



**HEAVILY LADEN DONKEYS**, still an important transport medium in rural Turkey, wait for a train to pass.



**SHIPS OF THE DESERT** are too heavy for the small Turkish stock cars and must be transported in coal cars.



**STATION PLAZA** at Ankara, capital of Turkey. The large, modern station is at the left. A restaurant-casino is at the end of the plaza, also the general offices of the State Railways and the Ministry of Communications.



**THIRD-CLASS PASSENGERS**, whose fares are about one-half those for first-class accommodations, carry their own water bottles and fill them at station stops where there are water fountains.

there were no traffic committees of powerful shippers to force rates and earnings down.

In March 1952, when I left Turkey, this situation had changed completely. The new Democratic administration, elected in May 1950, had promised legislation giving labor the right to organize and strike. Competition from buses and trucks was breaking down the previous railway monopoly of domestic inland transportation, due primarily to the highly successful program for highway improvement, which was an important part of Military Aid to Turkey. The highway program was administered by a group of highway engineers from our own federal

Bureau of Public Roads. As a result of the great highway improvements, trucking costs were reduced from 13 cents per ton-mile in 1947 to seven cents a ton-mile in 1951.

Competition from trucks and buses is beginning to make serious inroads on railway revenues. This competition probably will have a more serious effect on passenger traffic than on freight traffic. The "passenger-mixed" trains will enable the railways to give much better merchandise service between Istanbul and Ankara than trucks. Economic development of the country under the Marshall Plan will provide a large and growing tonnage of railroad carload freight.



## New Facilities

(Continued from page 18)

**St. Louis-San Francisco.**—Has ordered from the Union Switch & Signal Division of Westinghouse Air Brake Company material to install centralized traffic control on 127 miles of single track between Nonco, Tenn., and Amory, Miss. The style C control machine will be installed at Amory division headquarters.

**Union Pacific.**—A locomotive cleaning and paint stripping rack is being built at the Omaha shop yard (\$42,000). Additional facilities for rebuilding diesel locomotive engines are being provided in existing shops there. Four additional drop pit tables will be installed and two will be relocated, an overhead crane will be installed, and the area will be completely air conditioned (\$175,000). Glass block walls will be built around the area in connection with this work.

Elsewhere on the system the following projects are in progress or scheduled to begin shortly: At Cheyenne, Wyo., old lunch room facilities will be replaced by a 24-ft. by 100-ft. prefabricated metal building to house locker and lunch room, steel lockers, tables, benches, etc. (\$39,000); at Wamsutter, a 100-ton coaling station will be built to serve the eastward main track (\$96,000); at Green River a 48-ft. by 50-ft. masonry garage will provide facilities for stores department mechanized equipment (\$41,000); also at Green River, a 15,000-bbl. locomotive fuel-oil storage tank and pump-house with pumping equipment, piping, drainage, fire protection and other pertinent facilities will be built (\$122,000); at Denver a combination yard office and wash and locker room for switchmen and enginemen will be built in a one-story masonry building which will include a tile icehouse in a total space of 48 feet by 354 feet (\$280,000); and a one-story office building 36 feet by 128 feet will be built at Nampa, Ida., (\$236,000), to include a 14-ft. by 14-ft. yardmaster's tower, a paging and intercommunication system, locker and wash rooms, and air conditioned business machines room and office.

In connection with expansion of yard facilities at Ogden, Utah, by the Ogden Union Railway & Depot Co. (*Railway Age*, July 20, page 22), the UP will install a 10,000-bbl. locomotive fuel-oil storage facility and a 20,000-gal. service tank with pump-house and other equipment (\$115,000). The four-track car repair yard will consist of 7,510 feet of track, including nine turnouts. The project also will require 68,900 sq. yd. of reinforced concrete paving; a 50-ton traveling gantry crane; a 24-ft. by 90-ft. shop office and locker room building, and three minor buildings for housing boiler, compressor and store facilities, at a total cost of \$415,000.

**Western Pacific.**—Projects currently under way or about to be started total \$1,863,900. Signal facilities between Oakland, Cal., and Stockton are being rearranged and provisions made for power switches at both ends of sidings in connection with the overall traffic control signaling system. This work, by company forces, will cost \$558,900. Steam operating facilities at various locations between Oroville and Portola and on the Northern California Extension are to be converted for full diesel operation, but no contract has yet been awarded on this \$500,000 project. Section facilities between Portola and Salt Lake City will be retired, relocated or rehabilitated, as present operating practices dictate, at a cost of about \$80,000, on a contract yet to be awarded. The Utah Construction Company is replacing with concrete lining 634 feet of timber lining in Tunnel No. 1 of the Northern California Extension (\$300,000). A 5,600-ft. line change will eliminate Tunnels No. 7 and 8 on this same line. This latter work is being carried out by Morrison-Knudson Company at a cost of \$245,000. That firm is also daylighting Tunnel No. 9 (\$145,000). Company forces and an outside contractor are providing the system signal shop at Sacramento with a paved storage area and driveway (\$35,000).

## Financial

**Long Island.**—*Transit Authority Withdraws its Reorganization Plan.*—The Long Island Transit Authority has withdrawn its plan of reorganization for the LI (*Railway Age*, August 25, 1952, page 18), because "funds which under the plan would have been used to rehabilitate the railroad are instead being used by the trustee to pay taxes to the city of New York." the authority said in a letter to the I.C.C. "The road has no substantial credit," the letter added, "and no prospect of attracting new capital. Use of the cash for taxes will therefore, prevent the minimum car purchase and rehabilitation program which is absolutely necessary and which is a basic feature of the authority's plan."

## Securities

**Chicago South Shore & South Bend.**—*Application to List.*—Following authorization of its board of directors, this road has applied to the Midwest Stock Exchange to have its common stock listed thereon.

**Seaboard Air Line.**—*Stock Split.*—Stockholders have approved a proposal to split the common stock on a 2½-for-one basis (*Railway Age*, July

20, page 26). Each present share, without par value, will be converted to 2½ shares of new \$40-par common stock. After the split, the public will hold 2,349,475 common shares and the company 100,000.

## Authorization

**PORTLAND TERMINAL COMPANY** (Maine Central).—To sell \$77,000 of terminal company 5 per cent first-mortgage gold bonds, and to issue and sell \$600,000 of unsecured notes. Proceeds will be used by the terminal company to pay its share of a new rail-highway bridge, for relocation of tracks to the new bridge, and for a new signal and interlocking system. Total cost of these projects is estimated at \$1,433,706. The first-mortgage terminal company bonds, guaranteed by the MC, will be sold privately. Maturity date is July 1, 1961. The promissory notes, in multiples of \$100,000, will go to the Guaranty Trust Company of New York. Maturity date for all notes will be April 1, 1954. Upon completion of the pending improvements, the terminal company plans to issue mortgage bonds to pay off the notes.

## Application

**PITTSBURGH & LAKE ERIE.**—To assume liability for \$3,225,000 of equipment trust certificates, to finance in part 40 diesel units costing an estimated \$4,353,000.

Description and Builder	Estimated Unit Cost
5 1,600-hp. road-switchers (American Locomotive-General Electric Companies)	\$155,300
35 1,000-hp. switchers (Alco-G.E.)	102,200
The certificates, dated September 1, would mature in 15 annual installments of \$215,000 each, beginning September 1, 1954. They would be sold by competitive bidding, with interest rate to be set by such bids.	

## Security Price Averages

	July 21	Prev. Week	Last Year
Average price of 20 representative railway stocks	64.09	64.03	63.07
Average price of 20 representative railway bonds	90.14	89.86	93.75

## Dividends Declared

**ATLANTIC COAST LINE.**—\$1.25, quarterly, payable September 11 to holders of record August 14.  
**DALLAS RAILWAY & TERMINAL.**—common, 35¢, quarterly; 7% preferred, \$1.75, quarterly, both payable August 1 to holders of record July 20.  
**LOUISVILLE & NASHVILLE.**—\$1, quarterly, payable September 11 to holders of record July 31.  
**NEW YORK, CHICAGO & ST. LOUIS.**—10% common stock dividend, payable August 7 to holders of record July 17; common, 50¢, quarterly; preferred, \$1.50, quarterly, both payable October 1 to holders of record August 28.  
**SARATOGA & SCHENECTADY.**—\$2.50, payable July 15 to holders of record July 1.

## Railway Officers

### EXECUTIVE

**Nye F. Morehouse**, vice-president and general counsel of the CHICAGO & NORTH WESTERN, has been elected senior vice-president.

**Frank Wilson**, assistant freight traffic manager of the TEXAS & PACIFIC, has been promoted to assistant to vice-president—traffic at Dallas. Mr. Wilson joined the T&P in 1920 as ticket clerk, and later served as soliciting freight agent at New Orleans and general agent at Texarkana and Fort

Worth. He was appointed assistant general freight agent at Dallas in 1945,



**Frank Wilson**

general freight agent in 1946, and assistant freight traffic manager in 1950.

#### FINANCIAL, LEGAL & ACCOUNTING

**William H. Carver**, superintendent of terminals of the RAILWAY EXPRESS AGENCY at Chicago, has been appointed assistant treasurer at New York.

**Miss Amy Mitchell** has been elected assistant secretary of the ATLANTA & WEST POINT, the WESTERN OF ALABAMA and the GEORGIA at Atlanta, Ga. Miss Mitchell was for many years secretary to the president of the roads.

**W. J. Finegan**, agent—real estate department of the LONG ISLAND, has been appointed assistant real estate agent of the PENNSYLVANIA at Chicago.

**Lowell Hastings**, general solicitor of the CHICAGO & NORTH WESTERN at Chicago, has been appointed general counsel there, succeeding **Nye F.**



**Lowell Hastings**

**Morehouse**, who has been elected senior vice-president. **Nelson Trotman**, general tax attorney, has been appointed general solicitor, handling

taxation, and **Drennan J. Slater**, assistant general solicitor, has been named general solicitor, handling litigation.

Mr. Hastings joined the legal staff



**Nelson Trotman**

of the North Western in 1931 as general attorney. He was promoted to assistant general counsel in 1942 and to general solicitor in 1947.

Mr. Trotman first came to the North Western in 1926 as general at-



**Drennan J. Slater**

torney. In 1942 he was appointed assistant general solicitor and became general tax attorney in 1952.

Mr. Slater became associated with the railroad in 1942 as general attorney. He was named assistant general solicitor in 1945.

Appointed as general attorneys of the CHICAGO & NORTH WESTERN at Chicago are **William J. Fremon** and **Robert W. Russell**. Both previously served as attorneys.

**S. M. Butler**, assistant general claim agent of the CHESAPEAKE & OHIO, has been appointed general claim agent, Chesapeake district, at Richmond, Va., succeeding **E. M. Hudgins**, promoted. **W. G. Hammack, Jr.**, district claim agent, has been named assistant general claim agent. Mr. Hammack will continue to have jurisdiction

over the Richmond division and the Newport News and Norfolk Terminal division.

#### OPERATING

**John Edwards, Jr.**, general manager of the Central region of the BALTIMORE & OHIO, has been transferred to the Eastern region at Baltimore, to succeed **F. G. Hoskins**, who will retire July 31, after 46 years of service. **Wilbur R. Galloway**, general superintendent transportation at Baltimore, succeeds Mr. Edwards as general manager of the Central region at Pittsburgh. **C. T. Williams**, superintendent, Cumberland division, at Cumberland, Md., has been named general superintendent transportation at Baltimore, replacing Mr. Galloway. **John F. Robbert**, superintendent, Ohio division at Cincinnati, has been transferred to the Toledo division at Dayton, Ohio,



**Wilbur R. Galloway**

succeeding **A. W. Conley**, who has been transferred to Cumberland. **C. S. Darling**, assistant superintendent, Ohio division, succeeds Mr. Robbert as superintendent of that division.

Mr. Galloway was born January 12, 1905, and began his railroad career with the B&O as machinist apprentice at Baltimore in August 1923, becoming machinist four years later. After serving the B&O as special representative to general manager, Eastern lines, and as assistant trainmaster and trainmaster at Pittsburgh, Mr. Galloway was named superintendent of the Alton (then controlled by the B&O) in 1941.

He was appointed superintendent of the B&O Chicago Terminal in 1943, assistant general superintendent transportation of the B&O at Baltimore in 1946, and general superintendent transportation in October 1949.

**R. E. Sease**, superintendent, Columbus division, of the CENTRAL OF GEORGIA at Columbus, Ga., has been appointed superintendent transportation at Savannah, succeeding **V. M. Aspinwall**, who has retired on account of ill health. **W. W. Brasselle** has been named trainmaster, Chattanooga, Cedartown and Greenville districts, at



Cedartown, Ga., succeeding **W. L. Ector**, who has been appointed superintendent, Columbus division.

Mr. Aspinwall was born at Savannah October 20, 1887, and joined the CofG in June 1904 as clerk, later becoming chief clerk. He was appointed assistant to superintendent transportation in June 1941, becoming superintendent transportation April 1, 1942.

**F. W. Myers**, superintendent of the Russell division of the CHESAPEAKE & OHIO at Russell, Ky., has been appointed to the newly created position of assistant to general superintendent at Huntington, W. Va. **O. W. Draper**, assistant superintendent of the Huntington division, at Huntington, has been named superintendent of the Russell division.

**H. C. Barnett** and **H. M. Ward** have been named car service supervisors of the ST. LOUIS-SAN FRANCISCO at Springfield, Mo.

**J. C. Brigham**, assistant to general superintendent of the CANADIAN PACIFIC's Alberta district, has been appointed assistant superintendent, Calgary division, at Calgary.

**David Wetterau**, assistant trainmaster of the SOUTHERN at Selma, Ala., has been appointed to the newly created position of trainmaster at Mobile.

#### TRAFFIC

**A. O. Tate**, industrial engineer of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Chicago, is retiring July 31.

#### ENGINEERING

**Chester J. Henry**, assistant chief engineer, Eastern region, of the PENNSYLVANIA, has been appointed chief engineer of that region, with headquarters as before at Philadelphia, succeeding **Louis P. Struble**, who retired July 1. **John E. South**, engineer bridges and buildings at Philadelphia, has been named assistant chief engineer. **William G. Kemmerer**, as-

sistant engineer bridges and buildings at New York, succeeds Mr. South. **John B. Smythe** has been appointed assistant engineer at New York, succeeding **Joseph A. Jorlett**, who replaces Mr. Kemmerer.

Born at Youngsville, Pa., December 1, 1900, Mr. Henry was graduated from the University of Cincinnati (C.E.). He entered railroad service in July 1918 as trackman on the PRR at Cincinnati and later served as rodman on the Baltimore & Ohio and the Big Four. He returned to the PRR in June 1923 as assistant on engineer corps, and subsequently became assistant supervisor, supervisor, and division engineer. Mr. Henry was appointed superintendent at Toledo in 1942; superintendent freight transportation at Philadelphia in 1943; superintendent,



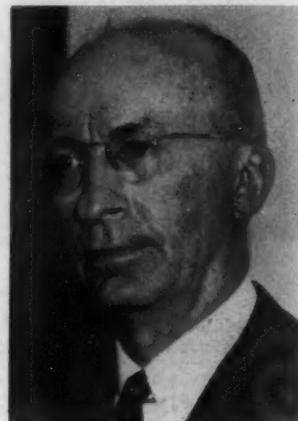
**Chester J. Henry**

Maryland division, in 1945, and assistant chief engineer, Eastern region, in 1947.

Mr. Struble, born at Branchville, N.J., November 22, 1886, attended Lehigh University (C.E., 1909), and entered PRR service in November 1909, serving at Pittsburgh as draftsman, transitman, engineer in charge, chief draftsman, assistant engineer and assistant to chief engineer, successively. From 1929 to 1938 Mr. Struble was in charge of construction of the Newark, N.J., passenger station; and

in the latter year returned to the post of assistant to chief engineer, Central region. He became chief engineer, Eastern region, in April 1942.

Mr. South was born at Pittsburgh, June 27, 1900, and attended the University of Pittsburgh (B.S. in C.E., 1924). He entered the service of the PRR in 1924 in the office of engineer of bridges and buildings at Pitts-



**Louis P. Struble**

burgh, transferring to Philadelphia the following year and serving as supervising draftsman, office engineer and assistant engineer of bridges. From 1927 to 1933 he was employed on design of structures for Philadelphia improvements, becoming engineer bridges and buildings February 1, 1947.

Mr. Kemmerer was born at Camden, N.J., August 23, 1889, and attended



**John E. South**

Purdue University (B.S. in C.E., 1912). He entered PRR service in 1913, working successively as draftsman, rodman, transitman, assistant supervisor, assistant master carpenter, bridge inspector, supervisor, master carpenter and assistant engineer at Chicago. In 1945 Mr. Kemmerer was appointed assistant engineer bridges and buildings at New York.

Mr. Jorlett was born at Clifton, N.J., March 28, 1904, and attended Rutgers and New York Universities. He joined

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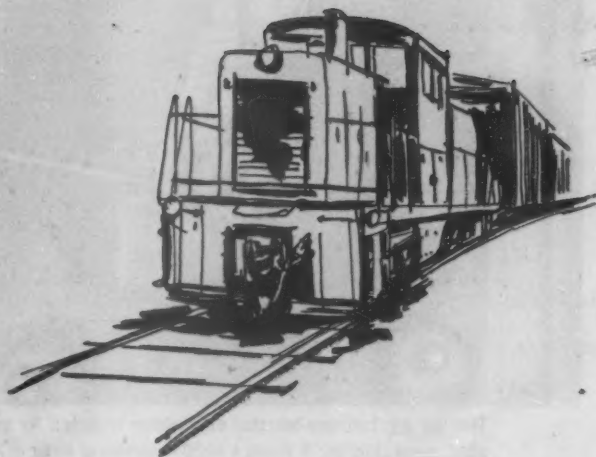
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- 1. General protection** for rolling stock, buildings and automotive vehicles with Pyrene Fire Extinguishers and wheeled units of various types.
- 2. Diesel engine protection** with the self-contained, small space Pyrene\* air foam unit. The 100 gal. unit discharges 1750 gal. of fire-killing air foam at the rate of 350 gal. per minute. Sufficient for almost any conceivable emergency.
- 3. Diesel repair shop protection** with Pyrene Proportioning Tanks. One tank (it can be installed in an out-of-the-way spot) can supply up to 1000 gal. of foam a minute to one or more Pyrene Foam Playpipes at any required locations.
- 4. Oil storage tank protection** with Pyrene fire-fighting systems. Manual or automatic types with capacities of hundreds up to thousands of gallons of foam per minute.

NOTE. The A.A.R. recently recommended that stationary foam systems

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the PRR in July 1929 in the New York division engineer's office at Jersey City, later becoming construction foreman on electrification of that division. After service as construction superintendent for the U.S. Resettlement Administration from 1935 to 1939, he returned to the PRR as assistant



William G. Kemmerer

bridge and building foreman, New York division, and later became assistant master carpenter at Philadelphia. He was appointed master carpenter, Conemaugh division, at Pittsburgh in 1942 and became assistant engineer at New York in October 1948.

Thomas S. Carter, Jr., district engineer of the MISSOURI-KANSAS-TEXAS at Parsons, Kan., has been promoted to assistant chief engineer at St. Louis.

George H. Echols, chief engineer maintenance of way and structures of the SOUTHERN at Knoxville, Tenn., will be promoted to chief engineer of the system at Washington, D.C., effective August 1. Robert B. Midkiff, as-



George H. Echols

sistant superintendent at Knoxville, will succeed Mr. Echols, and John W. Kidd, division engineer at Louisville, Ky., will replace Mr. Midkiff as assistant superintendent at Knoxville. Born June 17, 1901, at Milledgeville, (Continued on page 76)

EVERY DAY, PRR BUYS A MILLION DOLLARS WORTH OF

# what it takes to run a railroad

Nearly everybody thinks of railroad supplies in terms of steel rail and ties, but pins and pencils—brooms and brushes—butter and eggs—plus more than 200,000 other items (including such things as fuel and even ore unloaders) are needed continuously to keep the Pennsylvania's wheels rolling. Purchased from more than 20,000 different suppliers, such items represent an investment in materials, supplies and equipment of about a million dollars every working day. These millions are spent in every state of the Union.



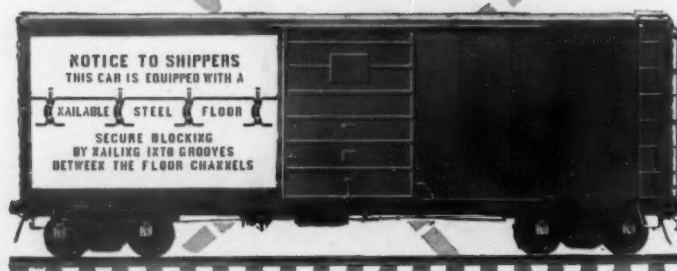
It is a pleasure to hold a ranking position as a *customer* of American business, a *buyer* of many diverse products as well as a *seller* of transportation... a *contributor* to the strength of our national economy as well as one of its *beneficiaries*.



## Pennsylvania Railroad

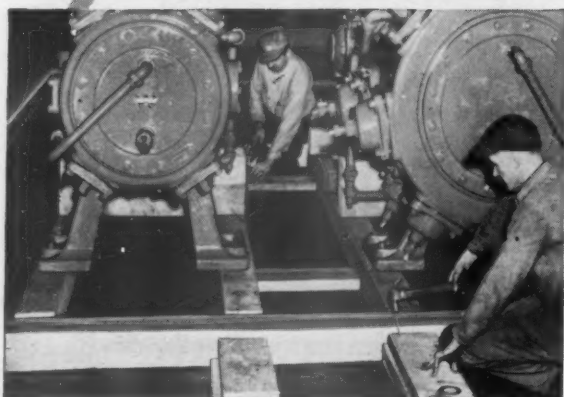


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Time was, not so long ago, when NAILABLE STEEL FLOORING was a novelty—something entirely new and different in freight cars. Today, N-S-F has proved its versatility and value in thousands of applications. And for tomorrow—all signs point to N-S-F becoming the standard for all cars requiring flat floors.

Why? Simply because N-S-F does a better job for railroads and shippers alike. NAILABLE STEEL FLOORING withstands all types of loading—lift truck . . . clamshell . . . magnet. It carries blocked and skidded loads, as well as bulk freight, with maximum security—makes every gondola a double-duty car.

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New N-S-F applications, listed at right, as shown in cars at our track exhibit last month at the A.A.R. Convention in Atlantic City.

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**NATIONAL STEEL**



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Train Master power, train handling capacity and versatility—the new “plus” in motive power that makes a major contribution to efficiency and operating economy in every phase of railroading.



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ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT  
HAMMER MILLS • MAGNETOS

#### TRAIN MASTER SPECIFICATIONS

<b>MODEL</b>	H24-66, 2400 H.P. Road Locomotive	
<b>TYPE</b>	Whyte Symbol	0-6-6-0
	AAR Symbol	C-C
<b>EQUIPMENT</b>	1-12 Cylinder Fairbanks-Morse Opposed-Piston Model 38DS-1/2 6-Heavy-Duty Traction Motors 4500 lb/hr Capacity Steam Generator Roller Bearings 6 1/2" x 12"	
<b>MAJOR DIMENSIONS</b>	Over-all length inside knuckles.....	66' 0"
	Over-all width.....	10' 3 1/4"
	Over-all height above rail.....	15' 0"
	Wheelbase total locomotive.....	49' 4"
<b>SUPPLIES</b>	Fuel Oil.....	1800 gallons
	Lubricating Oil.....	385 gallons
	Engine Cooling Water.....	250 gallons
	Train Heating Water.....	2400 gallons
	Sand.....	48 cu. ft.
<b>WEIGHTS</b>	Total fully loaded.....	375,000 lbs.
	Total on drivers.....	375,000 lbs.
	Per axle.....	62,500 lbs.
<b>PERFORMANCE</b>	Starting Tractive Effort at 30% Adhesion.....	112,500 lbs.
	Maximum Continuous Tractive Effort.....	Pounds
	Gear Ratio 68:15.....	78,750
	(Max. Speed 65 MPH)	
	Gear Ratio 63:15.....	72,900
	(Max. Speed 70 MPH)	
	Gear Ratio 62:17.....	63,300
	(Max. Speed 80 MPH)	
	Dynamic Brake Capacity at Rail.....	3,000 H.P.



# Thrifty Baldwins Consistently Get and Adequately Handle the "Tough Jobs"



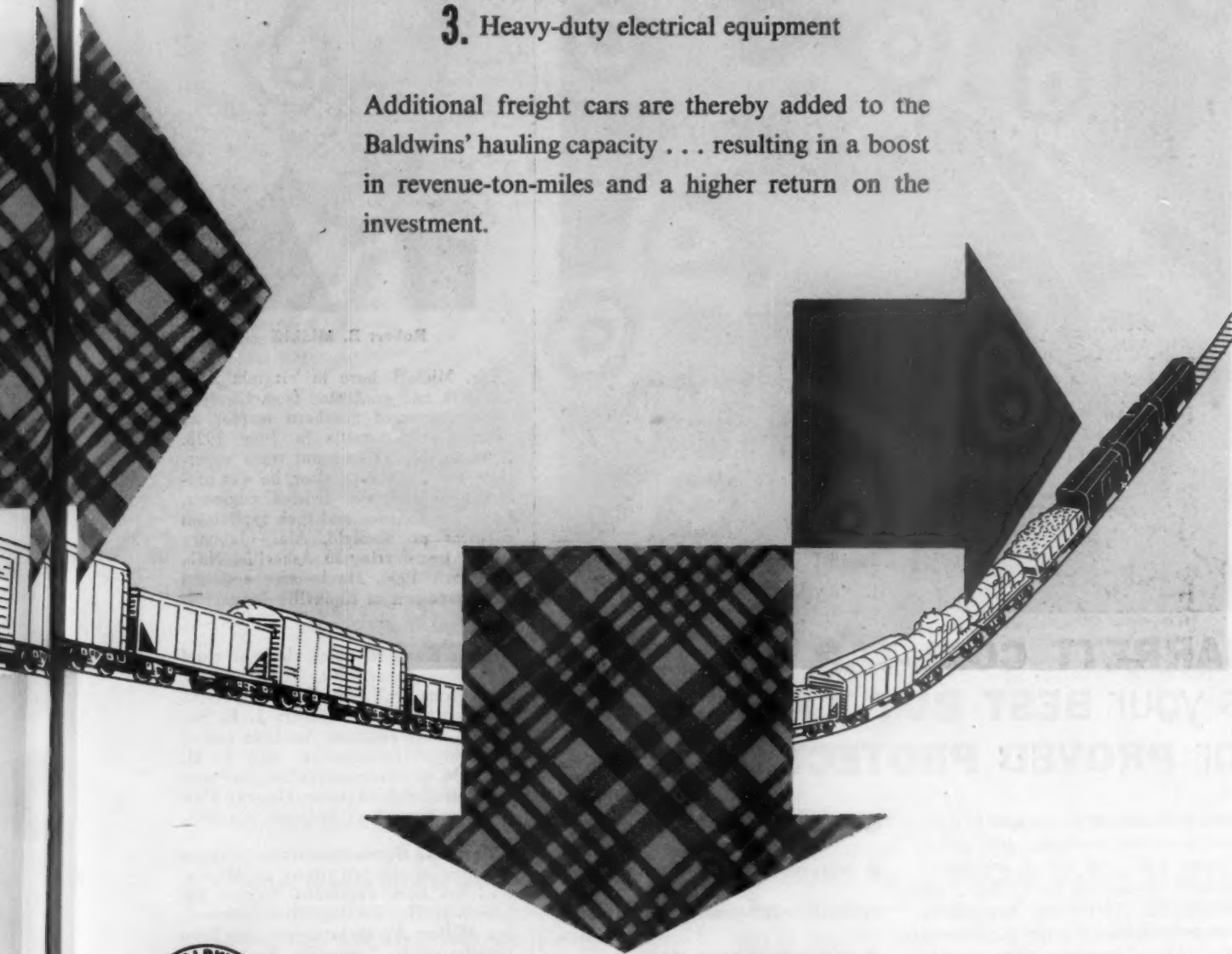
## Six Reasons why Baldwins Are Thrifty!

1. Baldwins give as much as 8% more miles per gallon of fuel.
2. They consume up to 33⅓% less lube oil.
3. 5 to 15% fewer diesel engine and electrical parts decrease wear, replacement, and maintenance costs, and increase availability.
4. The Baldwin system of dynamic braking has braking capacity which exceeds that found in the majority of today's locomotives—in some cases by as much as 50%—meaning less wheel and brake shoe wear, better control.
5. They have the weight and controls that can increase hauling capacity up to 3 additional freight cars in the tough assignments.
6. Standardizing on Baldwin renewal parts ensures finer quality and service for trouble-free performance and peak availability.

**3** factors give Baldwin diesels higher tonnage ratings in the tough assignments:

1. Their greater weight
2. Pneumatic throttle control
3. Heavy-duty electrical equipment

Additional freight cars are thereby added to the Baldwins' hauling capacity . . . resulting in a boost in revenue-ton-miles and a higher return on the investment.



**BALDWIN-Westinghouse**

**DIESEL-ELECTRIC LOCOMOTIVES**

.... they're thrifty



# Why chance it . . . when you have this proof?

Tests have shown that ties pressure-treated with Coal-Tar Creosote or its solutions have average life of over 30 years.



## BARRETT COAL-TAR CREOSOTE is your **BEST BUY** for **PROVED PROTECTION**

Three of the world's most widely used wood products—electric line poles, railroad ties, and piling are today regularly protected by COAL-TAR CREOSOTE. Time and experience have proved that it pays to preserve with coal-tar creosote because only coal-tar creosote gives you *all* these advantages:

- Proved by over 100 years in use.
- Defies rot, insects, marine borers.
- Does not react with wood to impair strength.
- Weather-proved in every climate.
- Retards checking and brooming.

No other wood preservative offers such lasting protection. Don't take chances... Specify wood pressure-treated with Barrett Coal-Tar Creosote for proved protection!



\*Reg. U. S. Pat. Off.

### BARRETT DIVISION



ALLIED CHEMICAL & DYE CORPORATION  
40 RECTOR STREET, NEW YORK 6, N. Y.

(Continued from page 70)

Ga., and graduated from Georgia Institute of Technology in 1923. Mr. Echols entered Southern service May 1, 1924, as junior engineer at Macon, Ga., subsequently serving as assistant engineer there, assistant track supervisor at Rome, Ga., track supervisor at Jacksonville, Fla., and assistant division engineer at Atlanta. He was appointed division engineer in 1946 and chief engineer maintenance of way and structures at Knoxville January 1, 1950.



Robert B. Midkiff

Mr. Midkiff, born in Virginia June 12, 1905, and graduated from Clemson College, entered Southern employ as rodman at Knoxville in June 1928. After serving as assistant track supervisor and track supervisor, he was promoted to assistant division engineer, Knoxville division, and then to division engineer at Sheffield, Ala. (January 1944), transferring to Asheville, N.C., in March 1946. He became assistant superintendent at Knoxville January 1, 1952.

J. J. Kasnitz, chief clerk of chief engineer's department, LONG ISLAND, at Jamaica, N.Y., has been appointed assistant to chief engineer; J. E. Solarski, office engineer, has been named engineer of construction; and T. H. Nichols, engineer accountant, has been appointed office engineer. George Patton has retired as assistant engineer.

Troy A. Barnett, assistant division engineer of the SOUTHERN at Atlanta, Ga., has been appointed division engineer at Hattiesburg, Miss., succeeding Milton P. Oviatt, who has been transferred to Louisville, Ky., to replace John W. Kidd, promoted to assistant superintendent at Knoxville, Tenn.

### OBITUARY

Elmer H. DeBoard, vice-president—traffic of the DETROIT, TOLEDO & IRONTON at Dearborn, Mich., died July 8 at Detroit of a heart ailment. Born in Norris City, Ill., in 1892, Mr. DeBoard spent almost 40 years in railroad work, of which the last 32 were with the DT&I.

# How OXWELD<sup>Trade-Mark</sup> Welding Rods



## Keep Diesels in Service

Cast iron cylinder heads — Repair cracks and rebuild valve seats with HELIARC or oxy-acetylene welding and OXWELD No. 9 Cast Iron Rod.

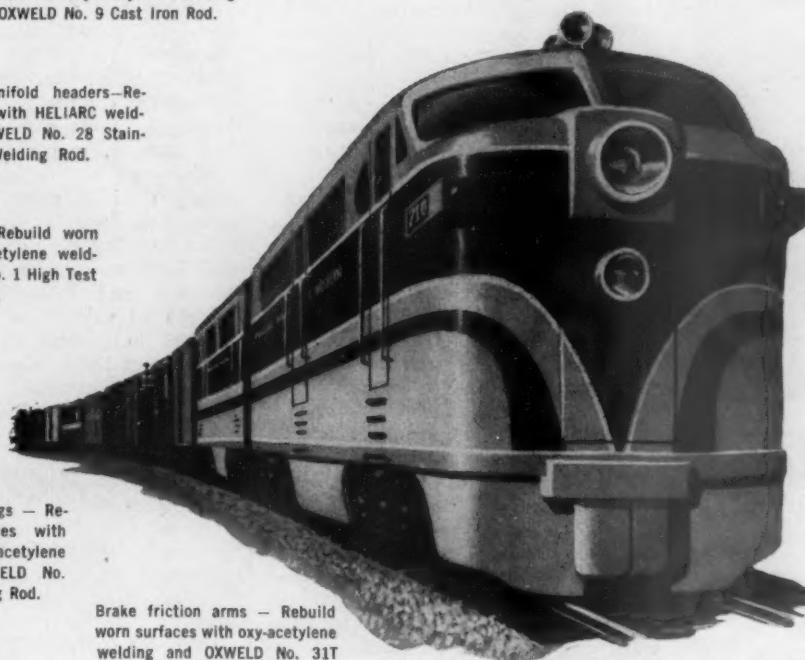
Aluminum pistons—Repair cracks and fill in ring grooves with HELIARC or sigma welding and OXWELD No. 23 Welding Rod or Wire.

Aluminum radiator parts—Repair cracks with HELIARC or sigma welding and OXWELD No. 23 Welding Rod or Wire.

Aluminum cooling blades — Repair breaks and cracks with HELIARC welding and OXWELD No. 23 Aluminum Welding Rod.

Exhaust manifold headers—Repair cracks with HELIARC welding and OXWELD No. 28 Stainless Steel Welding Rod.

Truck equalizers—Rebuild worn areas with oxy-acetylene welding and OXWELD No. 1 High Test Steel Welding Rod.



Axle thrust bearings — Renew worn surfaces with HELIARC or oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Brake friction arms — Rebuild worn surfaces with oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Compressor clutch sleeves — Renew worn teeth with oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Brush holders—Build up worn surfaces with oxy-acetylene welding and OXWELD No. 27 Low-Temperature Bronze Welding Rod.

Intake and exhaust valves — Build up worn faces with oxy-acetylene welding and HAYNES STELLITE Alloy No. 6 Rod.

Diesel cylinder liners — Repair and adapt for water passage with HELIARC and oxy-acetylene welding and OXWELD No. 31T Bronze and No. 9 Cast Iron Welding Rods.

Motor suspension bearings — Rebuild worn face with HELIARC or oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Malleable iron brake heads—Rebuild worn surfaces with oxy-acetylene welding and OXWELD No. 25M Bronze Welding Rod.

Here are some parts regularly restored by welding in leading diesel shops today. Repair welding returns damaged or worn parts to service quickly, maintenance welding keeps them there. In both types of work, OXWELD welding rods and wires assure strong welds that make diesel parts as good as new. That's because each OXWELD

welding rod and wire is designed to do the best job possible—to insure an excellent weld.

Your diesel shop also can realize attractive savings by using OXWELD welding rods and wires for these and similar jobs. For further details, write OXWELD for more information or ask for the booklet, F-8026.

"Heliarc," "Oxweld," and "Haynes Stellite" are registered trade-marks of Union Carbide and Carbon Corporation.

**OXWELD RAILROAD SERVICE COMPANY**  
A Division of Union Carbide and Carbon Corporation



Carbide and Carbon Building Chicago and New York  
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**Rugged fir plywood lining goes on fast, reduces weight, gives trouble-free service**

FIR PLYWOOD lining in boxcars or reefers gives you these three important advantages.

1. **Lower costs** through time and labor savings. Big panels speed work, require no special tools or fastenings.
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## Fir Plywood

Industry trademarks are your guide, guard and assurance of DFPA quality-tested plywood

Fir plywood is made in two types. 1. Interior-type for indoor or structural uses; 2. Exterior-type for uses exposed to water or weather; EXT-DFPA on panel edge means 100% waterproof glue. Grades within each type meet exact use needs.

PlyShield is the "good one side" grade for siding, lining and other jobs where only one side of the panel will be in view in the finished job.

EXT-DFPA



**SPECIFY DFPA INSPECTED PLYWOOD**

## Current Publications

### PERIODICAL ARTICLE

*The Railroad-Trucker Brawl.* *Fortune*, June 1953, pp. 137, et seq. *Time, Inc.*, Kittredge bldg., Denver 2, Colo. Single copies, \$1.25.

This is an account of the \$250-million antitrust suit recently brought by Pennsylvania truckers against eastern railroads and the Carl Byoir public relations organization. *Fortune* says "Truckers and railroad men have been clobbering each other through public relations men and state legislators for years. Now they've collided in court—where the competition has begun to look rather sordid."

### PAMPHLETS

*Cross-Roads of the Nation.* 16 pages, illustrations, maps, drawings. Chicago Union Station Company, 210 South Canal st., Chicago 6. Free.

This may very well be the first time a passenger terminal company has published the story of its own organization.

Like Chicago's museums, Art Institute and other public institutions, Chicago Union Station is the attraction for many grade and high school field trips each year. This booklet is designed to provide (a) "theme" material for students, (b) something of a passenger traffic sales aid for the four Union Station roads, and (c) a souvenir of the students' visit. It also serves to satisfy inquiries about the terminal, its history, etc.

The book contains photographs of different station accommodations and tells how they are operated. With a two-color map it shows the combined coverage of the nation by the Union Station roads and their through car (or train) connections. And to illustrate the variety of passenger accommodations available by train travel, it devotes a full page to the premier train of each of the roads. Other pages show operating organization of the company, provide identification of signals, etc.

*Air Transport Facts and Figures*, prepared by Air Transport Association of America. 14th Edition, 1953. 19 pages. American Aviation, 1025 Vermont ave., N.W., Washington 5, D.C. Free.

Reviews developments in the aviation industry during 1952, and reports, statistically, the growth of U.S. scheduled air lines from the beginning of World War II to the present.

*Occupational Safety Services (Service Guide 2.1).* 52 pages, illustrations. National Safety Council, 425 North Michigan ave., Chicago 11. Free.

This new guide provides company safety directors with a complete catalog of the many and varied accident prevention aids available from the National Safety Council. They will find not only the tools they need to build

their plant safety programs, and the training aids available for instructing supervisors and workers, but also the council's periodicals, newsletters, and a complete library of technical and administrative publications covering all phases of occupational accident prevention. Information on subjects covered in the basic and advanced courses of the council's safety training institute also is included. To assist the foreman, the Service Guide offers a monthly magazine, 24 training films that show supervisors how to use basic human traits in building a better safety program, and several hundred made-to-order five-minute safety talks. A full line of posters, films and booklets are available to sell safety to the man on the job.

*Carbon and Low Alloy Steel Castings.* 16 pages, illustrations. Steel Founders' Society of America, 920 Midland bldg., Cleveland 15. Free.

Contains comprehensive data detailing applications emphasizing reliability, strength, and versatility of steel castings as an engineering material widely used in more than 100 vital industries. Included is definitive material covering steel casting properties, specifications, design, joining, heat treating, and inspection procedures. Of special value is a two-page chart devoted to general engineering types of steel castings, classified according to tensile strengths.

*Friendly*

and so very much more

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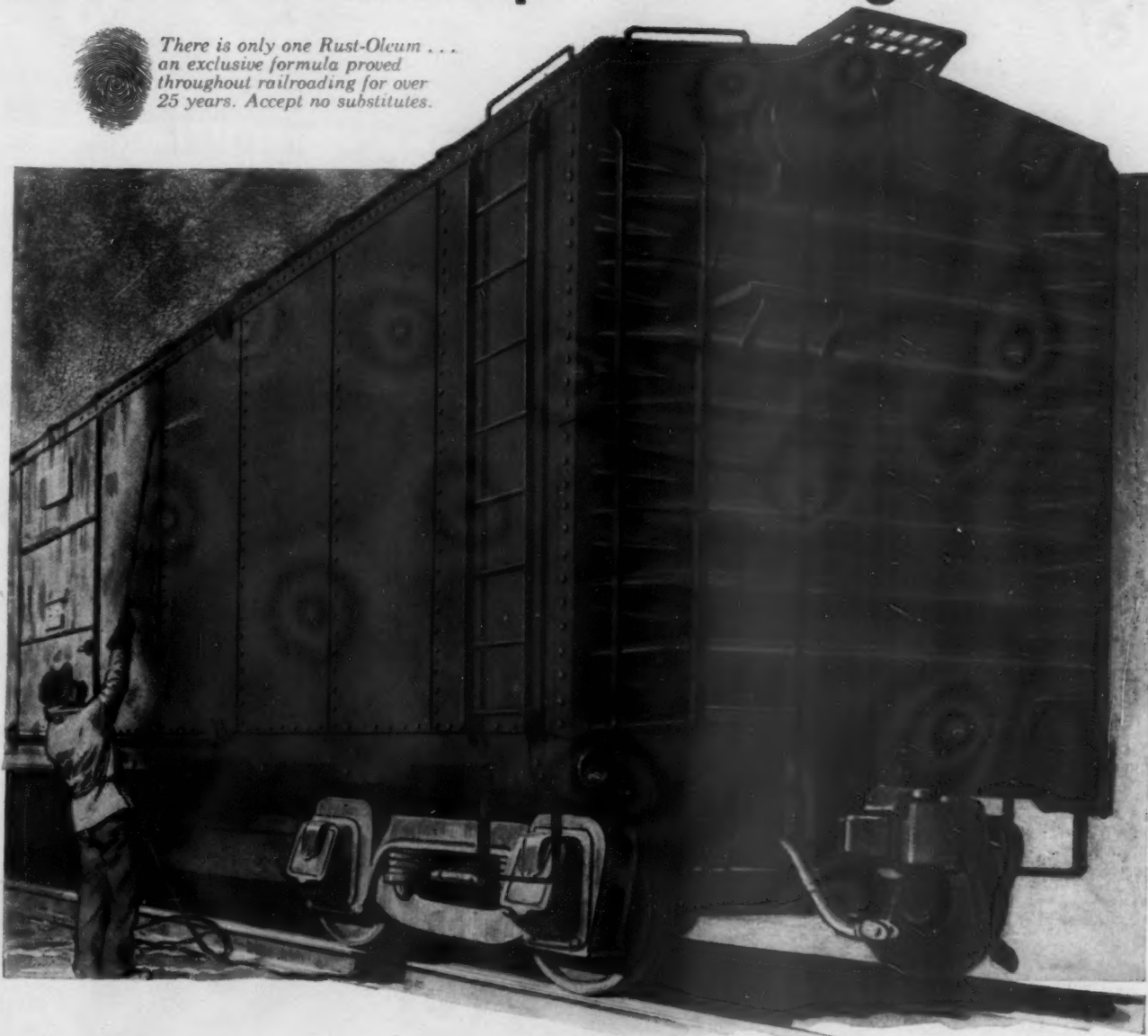
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You can keep switches operating during the worst winter weather with a General Electric snowmelting system. The heart of this system is the Calrod\* heating unit which is attached to stockrails at switchpoints.

When a storm approaches, remote-controlled G-E snowmelters distribute safer, even heat at these vital points without danger of burning ties or rolling stock. G-E flameless snowmelters cost only a few cents per hour per switch, are ready to start working when and where you need them, and require little maintenance.

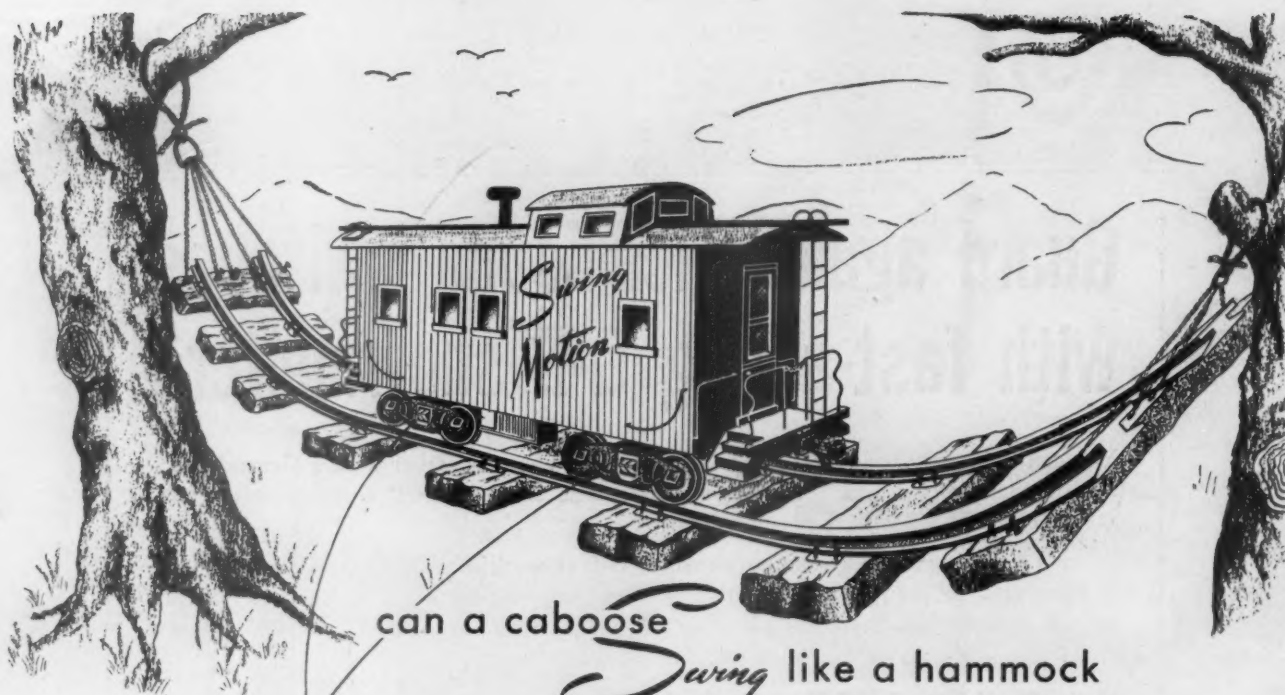
Plan now for your winter snowmelting needs. Before you submit your 1954 budget, ask your General Electric representative for the full details on G-E snowmelting systems. General Electric Company, Schenectady 5, N. Y.

\*Reg. Trade-mark of General Electric Company  
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*You can put your confidence in—*

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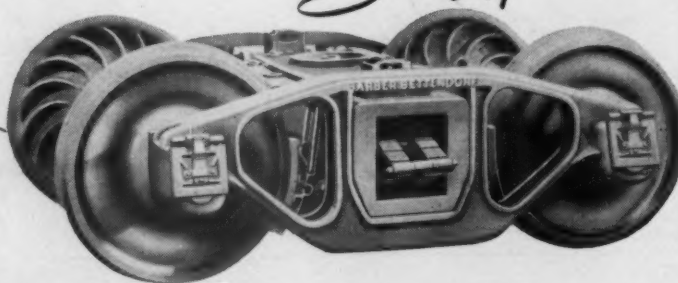




can a caboose

*Swing* like a hammock  
without jerks or sharp shocks?

**Yes...if it has BB *Swing Motion* TRUCKS!**



Comfortable riding is as essential for Trainmen as for Passengers — and Barber-Bettendorf *Swing-Motion Trucks* give Caboosees that kind of a ride. In these trucks, the bolster and elliptical spring assembly is suspended on swing hangers which provide a full floating effect on rough or

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The caboose body swings laterally like a hammock, without jerks or sharp shocks. Exceptionally comfortable riding is further assured by the full elliptical springs, which are best for constant loads.

*More than 6,500 caboose cars now are equipped with*

**BARBER-BETTENDORF**

*Swing Motion*

**CABOOSE CAR TRUCKS**

*and the demand for them is constantly increasing*

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Information for *Swing-Motion Trucks* for any type and size of caboose will be gladly furnished upon request.

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Here is the clear plastic box that got spectacular attention in Atlantic City as it proved beyond question the efficient action of the ROTH journal lubrication system.



# THANKS!

Your acceptance and praise for the three newest ROTH products for journal lubrication was most gratifying. Thanks for stopping by while you were at the Railroad Show. Having served the railroad industry since 1923, we know your problem with inefficient methods of journal lubrication. We believe we have solved that problem!

For you who were unable to attend the show, we are listing the three items that operate as a unit to cut costs, prevent hot boxes and reduce maintenance labor. Yet they require no welding, no drilling or other costly installation expenses. You use your existing equipment!

If you have not already done so, be sure to send us your name so that you will be registered to receive latest engineering data and results of the AAR and other tests as soon as they become available.



**ROTH RUBBER COMPANY**

AAR approved for interchange service

## The ROTH LIDSEAL



Keeps out dirt, dust, brine and rain . . . seals in oil. Easy to install. Exclusive breather permits ventilation.

## The ROTH LUBERATOR

Uses free oil . . . replaces obsolete waste packing. Fits any journal box . . . simply slips in place.



## The ROTH SEALOIL



Completely seals rear of box against dirt and moisture . . . keeps in oil. Adjusts to surface of dust guard well . . . reduces moisture condensation.

## MAKE YOUR OWN TEST!

The Roth lubricating combination will soon be available in quantities for testing purposes. If you desire to make your own verification of the marvelous job these items will do, please let us know. We will make sufficient units available to your road for a decisive and conclusive test of their performance in eliminating hot boxes.

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... the hydraulic setting refractory for service to 3000F  
for slap trowelling  or gunning  applications

Just slap 3X Blazecrete\* into place and trowel it smooth. It's as easy to work as concrete. No laborious ramming or tamping is required. That's why this hydraulic setting refractory material saves valuable man-hours and down-time when you relined boiler walls. And remember, 3X Blazecrete withstands temperatures up to a full 3000F.

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# Johns-Manville

95 YEARS OF SERVICE  
TO TRANSPORTATION

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From these observations, we found it to be the consensus of railroad executives and mechanical men that:

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- International Caboosees offer design and construction features that will overcome these shortcomings.

They **RECOGNIZED** the sturdy all-steel construction that could withstand heavy pusher service and terrific rack-in and rack-out. They **NOTED** and **REALIZED** the importance of International's many, improved safety features. They **APPROVED** the accommodations that enable the conductor and the crew to work at peak efficiency.

If you haven't seen the new International Caboose we'll be glad to send you our most recent illustrated catalogue showing various standard types and we'll be more than pleased to give you information by phone or personal call.

**International**  
**CABOOSES**

**INTERNATIONAL RAILWAY CAR CO.**  
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# Controlled Tests Prove

## **Pressure-creosoted fence posts last longer!**

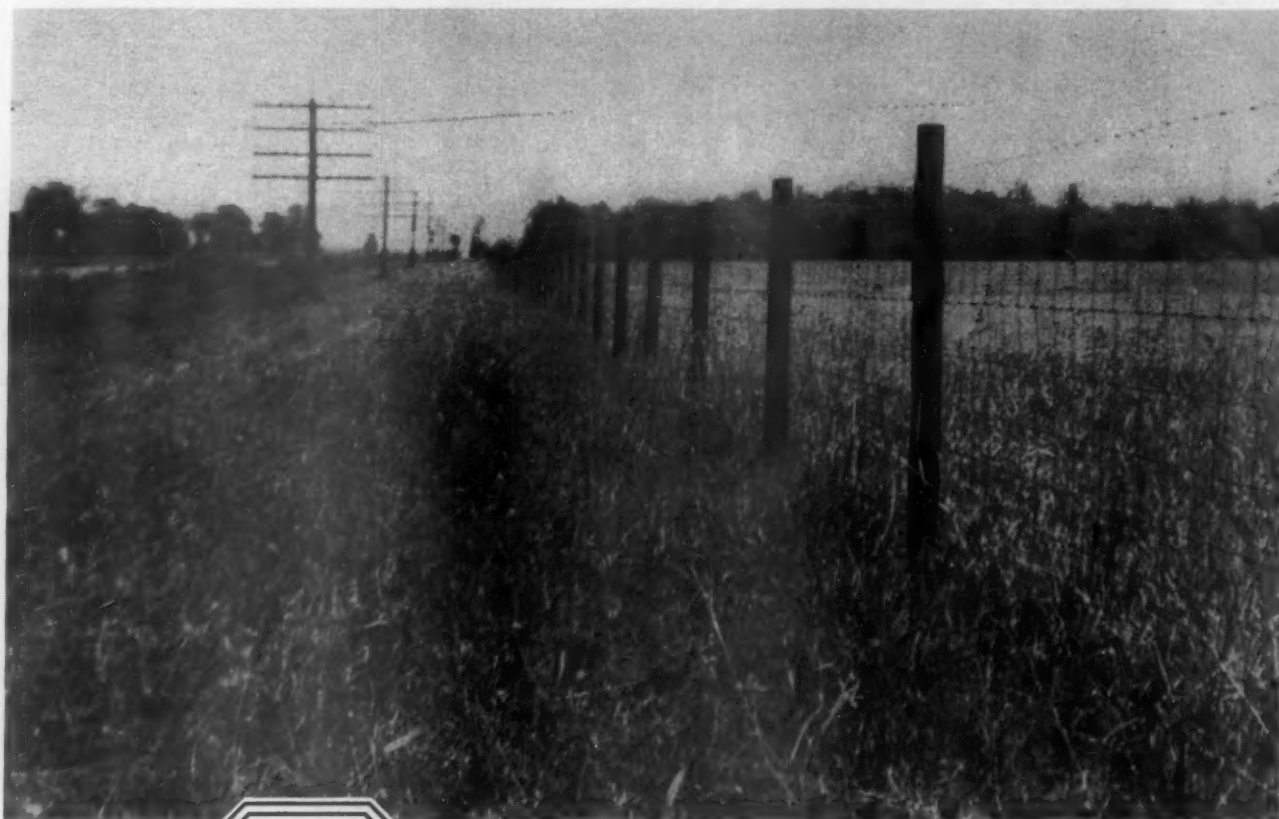
● In 1925 the *Chesapeake and Ohio Railway* made a test installation of treated and untreated wood fence posts, along with a number of steel fence posts. Yearly reports were kept on the test fence. The 1943 Report showed that, after 18 years, almost 90 percent of the untreated posts and about 35 percent of the steel posts had needed replacement. *All* of the creosote treated posts, however, were found to be in good condition with no renewals necessary.

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Eight Wheel, Cupola Type

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**5 MOUNTAIN-TYPE STEAM LOCOMOTIVES, TYPE 4-8-2, EXCELLENT CONDITION**

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44 ton General Electric diesel  
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New 1951.

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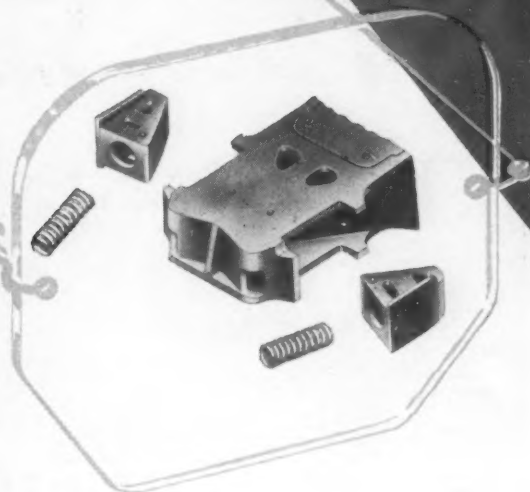
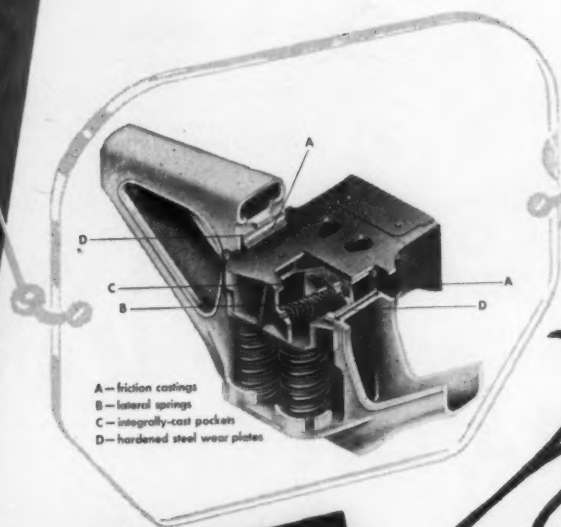
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